THE physical therapy REVIEW

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Physiatric Rehabilitation of Brachialgia — von WERSSOWETZ

Improvised Foot Support — WAGNER

The Personnel Shortage: Its Effect on the Qualified Physical Therapist — MOORE

School Section

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The Physical Therapy Review

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Volume 32 **April 1952** **Number 4**

Physiatric Rehabilitation of Brachialgia

Odon F. von Werssowetz, M.D.

Painful shoulder disabilities are common and account for a high percentage of the cases referred for physiatric treatment. There are many heterogenous conditions that produce this disorder, and the diagnosis of the specific lesion may present a difficult problem, but it is essential if intelligent treatment is to be instituted. In general, painful conditions of the shoulder may be of local origin or may be caused by dermatome or scleratome radiation from lesions elsewhere. A careful examination and evaluation of all findings will usually indicate the site of the common lesion causing the involvement.

This paper will be limited to the consideration of the treatment of conditions affecting the brachial plexus after it leaves the spinal cord. The rationale for physiatric treatment is based on the prevention and alleviation of certain mechanical inequities that occur in this region. Obviously one method of treatment cannot apply to all of the disorders that may effect this area.

In the final analysis, it becomes evident that brachial plexus may be affected

(1) Within or as the nerve roots emerge from the intervertebral foramina, and

(2) In the supraclavicular region.

Chief, Physical Medicine Rehabilitation Service, Thayer Veterans Administration Hospital, and Professor of Physical Medicine, Meharry Medical College, Nashville, Tennessee.

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Compression of the Nerve Roots:

Compression of the nerve roots within or as they emerge from the intervertebral foramina may be due to herniation of nucleus pulposus; osteophytes on the vertebral bodies, as found in osteoarthritis, and particularly if the exostoses protrude posteriorly into the foramina; chronic trauma; or postural strain.

It is necessary to emphasize that the mere presence of hypertrophic changes on the vertebra is not sufficient evidence to assume that they produce appreciable narrowing of the intervertebral foramina, giving rise to symptoms. The nerve roots, as they pass the foramina, take up about one-half of the space; the rest of the foramina is filled with fat and other soft tissues. The intervertebral canal is formed by the concave borders of the pedicles of the adjacent vertebrae. It is completed posteriorly by the articular capsule of the apophysial joint and anteriorly by the intervertebral disc. It is fairly solid but not entirely rigid. The inclination of the apophysial joint is, in the lateral plane, at an angle of approximately forty-five degrees. When the cervical spine is extended, the lower facet slides upward and forward. This narrows the foramen both in the horizontal and vertical plane. When the neck is straightened or stretched, the bony portions of the foramen are separated and so the foramen is enlarged. Any abnormal relation in this region may produce compression.

This type of compression is characterized by a variety of symptoms, but chiefly by pains radiating to the tip and back of the shoulder, the outer border of the arm, the forearm, hand and fingers, and sometimes to the pectoral region. There are paresthesias of the thumb and index finger. There may be pain on coughing or sneezing. Examination may show that the head is carried forward due to a fixed flexed position at the cervicothoracic angle. Movement of the neck may be restricted, and some of the muscles may show spasm.

Treatment is directed to the relief and avoidance of pressure in the intervertebral foramina. In mild cases, all that may be required is the correction of malposture and change in the occupational habits. The latter is one of the most important phases in the rehabilitation of such a patient. The position assumed should be one of straightening of the cervical spine.* This straightening opens the intervertebral foramina and often gives remarkable results. Straightening of the cervical spine is best obtained by instructing the patient to pull his chin down and in as hard as he can. This can be used as an exercise, at which time it can be combined with rotation of the head in either direction. If more stretching is required, the above exercise may be reinforced by having the patient place the hand, opposite from the rotated side, behind the head and in front of the ear of the side to which the head is rotated and forcibly exert some pressure during rotation. (Fig. 1.) For some cases, Nachlas used strapping that grasped the nape of the neck and held it back by adhesive. This serves to hold the patient in alignment and to remind him to keep the head straight.

In more severe cases which are usually associated with muscle spasm or contracture, the application of heat and massage preliminary to exercise is beneficial. Usually this produces some relief of pain and relaxation of muscles. Moist heat in the form of hot packs appears to give the best results, though diathermy also gives good relief.

Some cases are relieved remarkably by rapid rhythmic exercise. The physiologic principle of this procedure is based on overcoming the splinting action of muscles resulting from pain, which is secondary to disease or injury. When once involuntary muscular activity has been established, it is liable to persist as a habit phenomenon for months or even years. This is especially true of those regions where voluntary movement does not play a prominent part in daily activities. This persistent splinting results in pain, thus establishing a vicious cycle. Rapid rhythmic exercises are of great value in disrupting this condition. The exercise consists of to and fro movements of the head laterally, forward, and backward, having a rapidity of eight complete movements in each five seconds. Similar movements of the shoulders, like shrugging, etc., are also used. The movement must be an active voluntary contraction of the muscle causing the splinting. Each movement consists of two parts: the first is a forcible contraction causing strong stretching of the involved muscle; the return half must be effortless and gentle. This exercise is performed several times a day and, depending on the severity of the condition, it may be necessary to carry it out for several weeks or months. It is easy to instruct the patient in the application of this method at home.

If the above exercise procedure is administered with Sayre traction of the head, speedy correction results. The force of traction is adjusted to individual tolerance, which is usually forty to eighty pounds. The usual traction period is from one to several minutes, depending on the patient's tolerance and reaction, and can be repeated two to four times during one procedure. Usually the patient should continue such treatment at home twice a day for as long as necessary. In some of our cases, such treatment was used as a prophylactic measure for a year with excellent results.

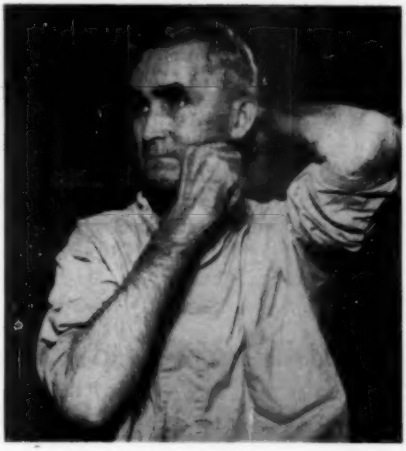

Figure 1

*Straightening here is defined as the elongation of the spine in the vertical direction, causing diminution of the cervical curve. It should be distinguished from extension or hyperextension, which accentuates the cervical curve more.

The home procedure is as follows: The apparatus consists of a Sayre halter (Fig. 2 and Fig. 3.), from which a rope is passed over two pulleys and attached to the prescribed weight. This weight can be in the form of a sand bag, etc. The patient is instructed to adjust the rope so that the weight rests on the floor while he is standing and has the halter on. Then he is instructed to sit down in a chair. (Fig. 4) This causes controlled traction without danger to the patient. More severe cases usually require continuous traction in bed until the acute symptoms subside. Then it is necessary for them to wear a collar for several weeks.

Compression in the Supraclavicular Region:

It has long been recognized, but not sufficiently emphasized, that the major factor in compression of the brachial plexus in the supraclavicular region is the descent of the shoulder girdle, which results in an altered relationship between it and the thoracic cage. In childhood the clavicle has an upward and outward slope. This gradually changes so that at puberty the clavicle is about horizontal. In the male there is frequently no further change, but in the female there is a further descent of the clavicle which definitely assumes a downward slope. Under normal and average conditions, this will not produce any symptoms, but if there occurs a decrease of tone of the supporting muscles of the shoulder a further descent of the shoulder takes place. It is, of course, obvious that the greater the drop of the shoulder girdle relative to the thoracic structures, the greater will be the tension on the brachial plexus. This hypotonia of shoulder muscles, from whatever cause it may be, is one of the two major factors producing this condition. The other factor, which is commonly found in a patient complaining of brachialgia but which is frequently overlooked, is the forward position of the head. This malposition of the head further increases the distance through which the plexus must traverse and thus exert additional tension on the brachial nerves and blood vessels by stretching them more tightly over the upper edge of the thoracic structures.

Hypotonicity does not develop uniformly in all of the muscles of the shoulder girdle. Therefore, a relative muscle imbalance occurs, and it is this muscle imbalance which is responsible for producing the various conditions such as scalenus anticus syndrome of Naffziger, costoclavicular syndrome of Falconer and Weddell, hyperabduction syndrome of Wright, the first rib compression syndrome of Walshe and associates, and various acroparesthesias. In this group brachialgia statica paresthetica of Wartenberg can be included as it has the same basic mechanism where a temporary compression of the lowest part of the brachial plexus takes place due to relaxation of muscles during sleep.

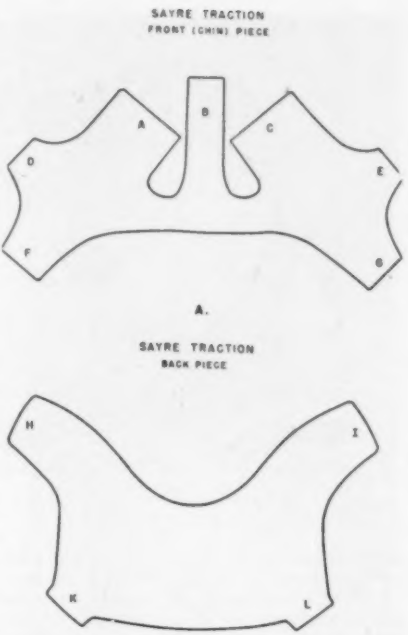

Figure 2. Sayre Traction Halter

Pattern A. is the chin piece for the halter. The edges marked "A" and "C" are placed alongside one another and on top of piece "B", which is under and away from the chin. This is sewed together, forming the cup of the chin piece. To "D" and "E" leather straps are sewed, which connect this chin piece with the back rest piece, Pattern B., at sites "H" and "I". These may be made adjustable. To "F" and "G" canvas webbing straps, about 1" wide, are attached for traction. These straps are attached to "K" and "L" of Pattern B. Before being attached, each strap is passed through a metal ring, about 1¼" in diameter. These rings serve to hook up the halter to a spreader bar (metal or wooden) and serve to equalize traction.

It is obvious that the presence of anatomical abnormalities associated with a descent of shoulder may exaggerate the stretching effect or compression

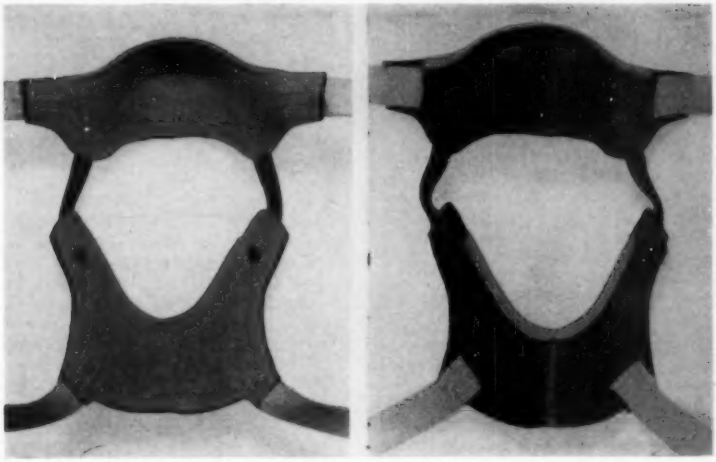

Figure 3

of the trunks of the brachial plexus. The most common anatomical abnormalities are: (1) cervical rib or a tendinous band from the transverse process of the seventh cervical vertebra, (2) forward insertion of the scalenus medius muscle, (3) abnormal first rib, (4) cervico-dorsal scoliosis, and (5) asymmetry and variations in thoracic outlet. Many persons with such anatomical abnormalities are free from symptoms until some time in adult life and many carry these anomalies throughout life without symptoms.

Clinically these cases show various symptoms of nerve irritation manifested by pain down the arm, paresthesia of the fingers, and occasionally atrophy of the intrinsic muscles of the hand. In addition, some may present symptoms of vascular disturbances as cold, dusky, swollen hands, irregularities of pulse, etc. These cases should have a careful evaluation of posture as usually defects are found here which may exaggerate symptoms.

In analyzing the muscle imbalance or weakness associated with a descent of shoulder girdle, one finds that the lower portion of the upper trapezius muscle is usually involved. This section, arising between the third and seventh cervical vertebrae, can act independently of the rest of the muscle and is the chief elevator of the shoulder girdle. Electromyographic studies show that the middle portion of the trapezius also, to a lesser extent, acts as an elevator. Frequently, hypotonicity is found in this portion and in the lower trapezius, the rhomboids, the serratus anterior, the superior portion of the pectoralis major and the sternocleidomastoid muscles. This type of involvement may be found in cases of cervical rib or scalenus anticus syndromes. Hypotonia of the upper part of the pectoralis major alone or associated with that of the serratus anterior is usually present in the costoclavicular syndrome of Falconer and Weddell. This results in the backward and downward depression of the shoulder, which causes mechanical compression of the nerves and vessels between the clavicle and the first rib.

Similarly, relative hypertonicity may be found in the pectoralis minor, lower part of the pectoralis major, and the latissimus dorsi which causes further depression of the shoulder. Of these, the relative hypertonicity of the pectoralis minor is important as it may be a direct contributing factor in producing brachialgia. With the cords of the brachial plexus and the blood vessels lying between the coracoid process and the thoracic cage, the hypertonicity of the pectoralis minor produces an impingement of these large vessels and nerves. If this is further aggravated by hyperabduction of the arm, then the "hyperabduction syndrome" of Wright is produced with all its symptoms.

The treatment of these cases is based on principles that aim:

(1) To increase the tone of the hypotonic shoulder girdle muscles so that their antigravity activity is reestablished and imbalance corrected.

(2) To correct the shoulder descent and restore the shoulder to the habitual anatomical relationship with the thoracic cage.

(3) To restore the proper postural alignment, particularly of the cervical spine.

In the majority of cases, following the above principles will relieve the symptoms. Of course, in the presence of abnormalities causing compression, surgery may be indicated but only after a trial of conservative treatment.

A careful history and a thorough physical examination will show the imbalance or weakness of motion and will establish what activities or exercises produce symptoms. A detailed manual voluntary muscle test will indicate the weakened, hypotonic or hypertonic muscles. When this has been established, then an exercise program is prescribed, which will at first correct the relative muscle imbalance so that a coordinate pattern of motion is obtained. Once this is attained, then general exercises are given for the correction of the shoulder descent and posture. There is no set of exercises that can be prescribed routinely. Each case should be evaluated individually and all muscular imbalance and weakness corrected. Preceding exercises, the application of some form of heat to the involved area is recommended. Moist hot packs give excellent results in alleviating pain. Luminous infra-red radiation may be used successfully.

The hypotonia of the lower portion of the upper trapezius muscle is manifested by a certain amount of elongation of this muscle. Active voluntary shoulder-shrugging exercises are used for strengthening this muscle. These exercises may be sufficient in very mild cases, but usually resistive exercises are needed. When resistance is applied to the shoulder, then other muscles come into action in proportion to the degree of resistance. In general, all resistive exercises performed with the arms at or above the horizontal level of the shoulder and particularly in the shortened position are beneficial. These exercises force the above muscle to overcome the resistance of their antagonists, i.e., the lower part of the pectoralis major, pectoralis minor, and latissimus dorsi. The higher the arm is lifted and the further it is carried backward, the greater is the resistance of these muscles, and the heavier is the work of the lower part of the upper trapezius. Circling exercise, like club swinging or stall bar exercise, is excellent for strengthening of all shoulder muscles, especially of the serratus anterior and the trapezius.

Figure 4

The shoulder girdle exercises should be combined with neck exercises. It is evident that the shoulder, being suspended from the lower cervical vertebrae, exerts a heavy pull which must be counteracted by the muscles in the region of the lower neck and the upper chest. Obviously, this pull is increased when weight is supported on the

shoulder or is carried in the hand. When the shoulder becomes depressed, then the neck muscles are also affected and may cause the head to stoop. Simple neck exercises, such as head pressing backward, may be beneficial in milder cases but are not sufficient to increase strength in more severe disabilities. In order to develop power in the neck muscles, exercises against resistance are required.

Here, it is well to point out that all these activities are graded, and the progress should be within the patient's tolerance. Too rapid progress of exercises may lead to grave complications and actually impede the recovery. These exercises should be carried out regularly and persistently for months.

In the early phase of treatment, Sayre traction is not used because it exerts more pressure on the stretched brachial plexus and vessels. In the later phase, Sayre traction may be of value in correcting poor posture of the cervical spine and head.

Supportive appliances are not used routinely but, in selected cases, may be of great value in relieving pain. A sling may be used in the acute stage to relieve the weight of the extremity, thus decreasing pain by a slight elevation of the shoulder. It should not be used too long, as it will produce harmful effects because it promotes the adducted position of the arm. Some cases are benefited almost immediately by an abduction splint. Pain can be relieved by having the patient sit down on a chair beside a table, then building up the arm with pillows or towels to a position of ninety degrees away from the side of the chest. This position frequently relieves pain altogether. In persistent, severe cases, especially of traumatic origin, a shoulder supporting brace may be of value.

Once the shoulder girdle is corrected to the habitual position relative to the thorax and a balance of tone is reestablished between the posterior scapular muscles on one hand and gravity and the anterior scapular muscles on the other, then there remains only the necessity of impressing on the patient that he should maintain this position and muscular balance at all times. He should keep the shoulders as nearly horizontal as possible. He should be warned not to attempt to carry them too high, as this will create imbalance again. A complete rehabilitation of the patient cannot be successful without instruction in the proper posture, especially of the head. Proper posture should be maintained at all times, and particularly while pursuing the usual occupation or vocation, as it does not suffice to perform exercises two or three times a day to establish good postural patterns. In addition, he should be instructed to change sleeping habits by arranging pillows so that the affected shoulder is raised from the chest wall. Reichert recommends the use of three pillows, placed in such a manner as to give this effect. When the patient is lying on his side, usually the affected shoulder should be the lower one, as it is easier to maintain it elevated. The use of the "contour pillow," as suggested by Jackson, is ideal for this purpose, as it tends to keep the cervical spine straight. Often, this gives great relief to the patient.

SUMMARY

Painful shoulder conditions are due to a heterogenous group of diseases and are characterized by pain in and about the shoulder with radiation down the arm. Whatever the etiologic factor, the symptomatology is due to irritation of the nerve tracts along their course from the cortex of the brain to the terminal nerves of the brachial plexus. Lesions occur in three regions, i.e., in the central pathway, in the intervertebral foramina, or in the supraclavicular area. Only those caused by the latter two are considered.

The mechanism of compression of the nerve roots within or as they emerge from the intervertebral foramina is discussed. The treatment aims to relieve the pressure by straightening the cervical spine. The best method is intermittent stretching of the head and neck by Sayre traction. This is associated with rapid rhythmic exercise to relieve muscle spasm. A home method of this procedure is outlined.

The main cause of compression or torsion of brachial plexus in the supraclavicular region is the descent of the shoulder girdle and forward placement of the head. Anatomical anomalies, such as cervical rib, etc., may aggravate or precipitate symptoms. A detailed analysis of muscles will show imbalance or weakness, caused by hypotonicity of some muscles or hypertonicity of others. The most common finding is hypotonicity of the middle and lower trapezius, rhomboids, serratus, pectoralis major, and sternocleidomastoid muscles. When hypertonicity is found, it is usually in the pectoralis minor muscle.

The treatment of these cases is based on principles that aim:

(1) To increase the tone of the hypotonic shoulder girdle muscles so that their antigravity activity is reestablished and imbalance corrected.

(2) To correct the shoulder descent and restore the shoulder to the habitual anatomical relationship with the thoracic cage.

(3) To restore the proper postural alignment, particularly of the cervical spine.

Pain may be relieved by the application of heat. This is followed by muscle reeducation so that a coordinated pattern of motion is obtained. Once this is attained, then general strengthening exercises are given for the correction of the shoulder descent and posture. The shoulder girdle exercises should be combined with neck exercises, as it is obvious that neck muscles from which the extremity is suspended are involved also, and need strenghthening.

In some severe cases of brachialgia, supports may be required.

Once the condition is corrected, the patient should be instructed in rehabilitation procedures to maintain this correction and to prevent recurrences. He should habitually assume the proper posture, particularly pursuing his usual occupation. He should continue with a home routine of exercises. Proper sleeping posture is important in the prevention of a recurrence of symptoms. This position should tend to keep the cervical spine straight and the shoulders leveled.

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Improvised Foot Support

For Ease in Changing Weights for DeLorme Quadriceps Exercises

Donald B. Wagner

At Columbia University, the curriculum for the two-year physical therapy course provides for a two-month clerkship in the summer between the first and second year. My assignment was to the Hospital for Chronic Illness at Rocky Hill, Connecticut. Miss Annette Wolter, the Supervising Physical Therapist of the Physical Medicine and Rehabilitation Department, included in her educational plans a rotatory schedule. The student had a chance for work and observation in all aspects of physical medicine available at that hospital. My schedule, arranged for July and August of this past summer, began with work in a room where DeLorme quadriceps exercises were given.

It was the system at Rocky Hill to have the patient rest his foot, in the boot with weights attached, on a stool while the weights were being changed. As we know, the center of the weights is at the bottom of the boot and just forward of the center of the heel: This means that a radius of the weight protrudes beneath the bottom of the quadriceps boot. Therefore, when the patient rested this attachment on a stool or any similar broad flat surface, the entire weight of the boot, weights, and in most cases the leg, was transferred onto the stool. When the physical therapist desired to change the weights he had to take all this pressure off the weight and remove it from the bar. As a result, the physical therapist had to lift ten to sixty pounds with one hand and slide the weight off with the other. When several patients require this treatment and receive it con-

secutively, this becomes a tiring, energy and time-consuming procedure. As physical therapy departments are often pressed for time it seemed to me that possibly some device could be constructed to make this an easier, more efficient, and faster procedure. The consumption of the staff's time and energy with technics of this sort adds up to an appreciable waste during the course of a day. The construction of a device that would fit between the two weights, thus leaving them free to be taken off and put on at will, seemed practical. The most efficient and stable device proved to be this foot support (as illustrated) which fits into the underside of the quadriceps boot. Different heights, angles, and sizes were tried, until finally this one, considered to be the most workable, emerged.

The outstanding features of the improvised foot support are its simplicity of construction, and economy of cost. The only materials needed are a few board feet of lumber, a shelf bracket, and a right angle corner brace. It can be constructed in any occupational therapy shop, but, of course, the more mechanical equipment available the easier it is to build.

Figure 1

Figure 2

The base (c) is a thirteen inch square piece of plywood (three-quarter inch) and the upright support (b) is a two-by-four. The right angle brace (d) must be changed to an obtuse angle as the two-by-four has been angulated at the bottom, as shown. This was done to achieve the required angle of part "a" without excessive blocking. Brace "e" is merely a shelf brace, but it affords sufficient support to part "a." For details of "a" the side view should be examined. It shows how it is constructed of three pieces, the bottom two (a2, a3) of plywood of three-quarter inch width, with a groove made in a2. The dots on the top of part "a" indicate the location of screws. Of the three screws on the heel block, at least one should be long enough to go into the upright (b). The back of part "b" is rounded at the top, as shown, to guard against corners that might catch on clothing or hands.

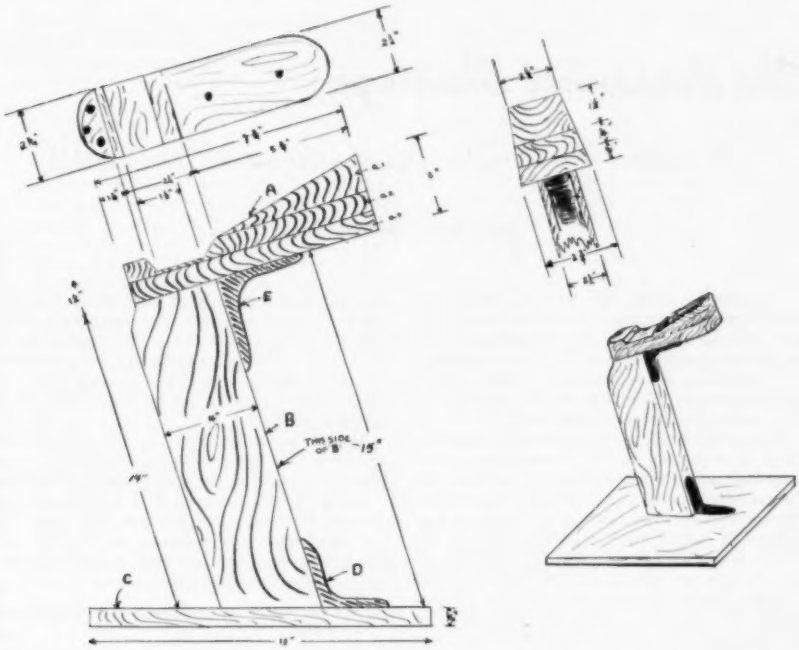

Figure 3

The benefits of the improvised stand were well established in the remaining weeks at Rocky Hill. It successfully performed the job for which it was constructed. The patient no longer had to lift his leg, with the weight attachment, onto the bench, thus putting unnecessary strain on himself; the physical therapist no longer had to hold all this weight, because it was now safely balanced and supported. The little bench was returned to its initial purpose, to be sat upon, and the weights could now be changed in half the time, because both sides could be changed simultaneously. The stand provided even more than was expected: it afforded a place to rest the boot while the foot of the patient was strapped in place.

The stands constructed at Rocky Hill were left there. Another stand was constructed this fall, however, and was demonstrated at the physical therapy departments of the Institute for the Crippled and Disabled, and at the Vanderbilt Clinic of Columbia-Presbyterian Medical Center. It has been accepted by both departments. Its economy of cost and construction time (per degree of usefulness) makes it a practical device for use in all physical therapy departments.

I should like to acknowledge the gracious assistance of the Occupational Therapy Department at the Hospital for Chronic Illness in the construction of the initial stands, and for the photographs. I also wish to thank two of my classmates, Vincent Privitera and Henry Mucci for their work on the mechanical drawing and photography, respectively.

The Personnel Shortage

Its Effect on the Qualified Physical Therapist

Margaret L. Moore, M.S.

It is alarming to find that the acute shortage of qualified physical therapists continues despite the yearly increase in the number of graduates from physical therapy curriculums. Every physical therapist, regardless of his current interest, should pause to consider the implications of this shortage and how the problem will be solved.

Physical Medicine and Rehabilitation, often referred to as the third phase of medicine, is now recognized as an essential part of medical care. The formulation of a philosophy of rehabilitation, together with the establishment and expansion of facilities to carry it out, has opened the way for services not available to patients fifteen years ago. It is not necessary to trace the development of this program, nor to describe the part the physical therapist has played in it. Physical therapists know its advantages and the contributions it has made to medical care all over the world.

Medical care programs are founded upon the professional personnel who build the service, give the care, and contribute to the results. What is the nature of their professional education? Are they being educated and trained to be professionally successful?

Physical therapists should give serious thought to the education of physical therapy students and their responsibility to contribute to it. At the same time they should acquaint themselves with the opportunities offered in the field of education. Although most established physical therapy curriculums are operating at capacity levels with relation to space, finances, and staff, civilian and military personnel needs are not being fulfilled. The fact that a shortage of personnel exists also in medicine and all its auxiliary services does not relieve the physical therapist of the responsibility to protect his profession. His future and that of his profession depend upon the way this emergency is met. The time for passive consideration of these needs has long since passed; now, increased action must be taken to overcome them. It is one thing to recognize the needs for service; quite another to fill those needs. If they are to be met adequately and the entire program developed soundly, then the superstructure must not be built hurriedly on an insecure foundation.

The needs for personnel *will* be met, of that we can be sure, but *how* it is done can affect every physical therapist in the country today. Therefore, it is the physical therapist who should make the decision. Basically, there are two paths open. We can either lower our standards of education and training, or maintain these and increase the number of available physical therapists.

I. We can lower the standards of education and training.

Academic requirements for college or university work can be reduced to one or two years. This would destroy the professional standing now enjoyed by the qualified physical therapist. The years during which he and his Association worked to establish and maintain those standards would be wasted.

Standards could also be lowered through the introduction of a physical therapy major course providing only bare minimum essentials into curriculums in virtually every college or university in the United States. To examine all such programs annually or biannually would be a prodigious, if not a prohibitive job for the Council on Medical Education and Hospitals of the American Medical Association, the accrediting body for courses in physical therapy. Standards would be difficult or impossible to maintain. To enforce the recommendations of the Council would be even more difficult. This would add hundreds of "graduates" to the field. In a few years we could look forward to as many physical therapy graduates as we have now each year in English, history, elementary education, or health and physical edu-

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cation. Numerically, the need would appear to be met; professionally, what would this mean? Would the graduate be the selected, well educated person that is needed to insure the sound development of physical therapy in the years ahead? Would he be equipped to give the best service to the patient?

Nursing and medicine have gone through such periods of over expansion. In 1910 there were over one hundred medical schools in this country. In many of them entrance requirements were low and the programs offered were extremely weak. At present, there are 72 medical schools approved by the American Medical Association, but the physician who graduates from one of these carefully selected schools today has been well trained to serve the patient and represent his profession.

At one time, many nursing schools were established in small poorly equipped hospitals. These substandard schools could not possibly train the nurse technically or intellectually to render the services required of her. Medical teaching facilities were limited, and nursing instructors were inadequately prepared. A number of schools have ceased to function, and others are expected to do so before many years have passed. Both nursing and medicine have gained by this elimination of such substandard education.

Changes in physical therapy education are evident also. It is generally appreciated that education of physical therapists has changed greatly in the past thirty years. Each year physical therapists are being graduated with better educational and cultural backgrounds because curriculums possess better integration and correlation of didactic and clinical experiences. These superior professional personnel are ready to serve patients and to assume places of leadership, responsibility, and stature in their area of medical auxiliary service and in the community.

Ten years ago, fifteen schools of physical therapy were approved by the Council on Medical Education and Hospitals of the American Medical Association. Most of these institutions accepted students with a minimum prerequisite of two years of acceptable college credits. Only five of these schools offered the student an opportunity to earn a baccalaureate degree in his chosen professional field. Today, twenty-eight programs are approved by the same accrediting group, but the programs show a marked contrast to those of a decade ago. Only three institutions go on record as accepting less than three years acceptable college or university credit.

Another change noted is in the academic credit granted for physical therapy education. Of the present schools, only three do not offer academic credit of any type; five others offer limited credit which may be applied to a degree in studies other than physical therapy.

Twenty additional institutions offering programs in physical therapy make it possible for a student to obtain his basic degree with major credit in physical therapy within a four-year period. Prospective students are urged to obtain a degree in physical therapy at the completion of four years of study whenever possible. Most other physical therapy students possess basic degrees in allied subjects such as science, education, physical education or nursing. These students are then able to earn graduate credit in physical therapy in many institutions. This is as it should be. The advancement in the academic requirements and recognition of physical therapy is in keeping with the general trend of education in the United States.

II. We can maintain the level of education and training and *add* to the numbers of available physical therapists.

The second choice open to the physical therapists is to maintain the professional level of education, training, and service, and attract many more qualified people to the field. Present programs have vacancies and some could expand if the number of qualified applicants increased. Additional curriculums in physical therapy, well directed and academically strong, are needed in some sections of the United States in order that more students may have the opportunity to study without travelling great distances or expending the large sums of money required for nonresident students. The lack of such educational opportunities may well be one reason why many colleges and universities find it convenient to offer rehabilitation courses for physical education majors. They do not realize the disservice to students that such subprofessional programs render, nor the injury done to the medical and medical auxiliary education fields they wish to serve. Many institutions are merely trying to find employment outlets or opportunities for large numbers of physical education majors.

Students, if wisely guided early in college, would arrange their programs in order to become recognized in the established professional field of physical therapy. By this approach, at

An instructor may begin her classroom experience by teaching one unit within the framework of an extensive course such as postural analysis in kinesiology or therapeutic exercise.

the completion of no more than four years of college work, they could have the security of employment where standards of training assure that the individual is capable of handling the clinical medical problems he will be called upon to treat.

It is true that additional schools are needed, but they should not be organized unless they can provide good medical direction, and a staff of qualified physical therapists of sound education and good clinical experience. The programs should meet other essentials as well —clinical facilities, medical teaching facilities, and basic science teaching facilities. Only students, who have been directed and taught by skilled individuals of maturity and stability, can be expected to give professional services of the highest caliber following graduation. There must be no compromise with the quality of instruction; to do so leads to inadequately prepared physical therapists. Hundreds of well-equipped physical therapists are prepared to assume this type of leadership and are greatly needed to assist in educating additional physical therapists. This is the only logical way to meet the demands and shortages as well as to continue identifying physical therapy as a medical service capable of rendering the best in intelligent care.

Currently, there are needs for physical therapy curriculum directors, often titled "Technical Directors," full time and part time instructors. In many instances, instructors will also supervise students in clinical practice or will do general clinical work in conjunction with some teaching responsibilities. Teaching is not a new venture for the physical therapist. Many in this profession have received special training in education and hold baccalaureate and advanced degrees. Hundreds taught before entering the field of physical therapy.

Actually, the experienced physical therapist has been a teacher or an instructor since he taught his first patient to sit properly in bed or to walk on crutches for the first time. The physical therapist with good clinical experience has much knowledge and skill that would benefit the student. This knowledge and skill cannot be obtained from written texts; it is imperative to have expert interpretation, demonstrations, and instructions.

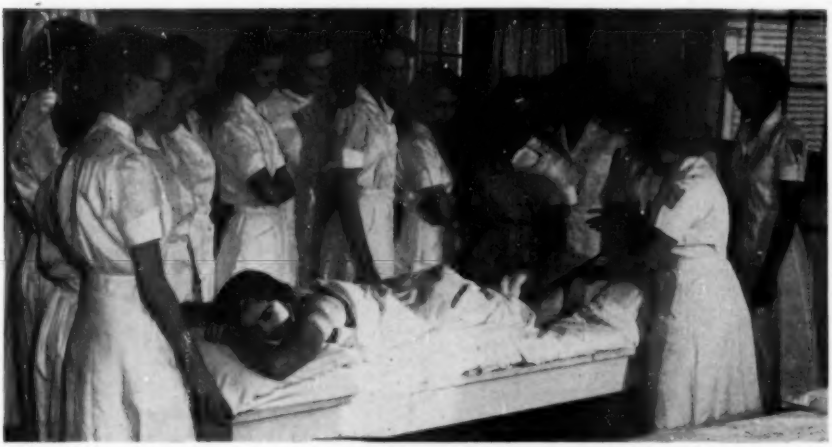
Supervisors and chief physical therapists have taken part in clinical teaching or supervision of other physical therapy staff person-

nel, medical students and residents, nursing students or staff. Much of this could carry over into classroom instruction. Some opportunities which are available make it possible for the new instructor to participate in extension classes, or special classes in educational methods at affiliated colleges and universities if he desires. He may also assume teaching responsibilities gradually by first assisting a more experienced teacher in laboratory practice classes.

Teaching selected professional students is quite different from other forms of instruction. In this instance, the students are generally mature, and quite receptive to instruction since they are in school by choice and intend to pursue physical therapy as a professional career. They are eager to learn all they can while they are in school and do not need to be encouraged to study. Disciplinary problems are negligible. Teaching students of this type can be a stimulating and gratifying experience. The instructor continues to learn while he directs the classwork of his students. He must be alert and well informed. The fact that physical therapy curriculums are in medical teaching centers gives the instructor many interesting educational and professional contacts. The instructor may be assured that he has made an invaluable professional contribution to physical therapy for he will in many ways influence all of those students who have studied with him. In this way his ideas and skills in well correlated clinical work, professional conduct, and ethics can be felt in the professional field outside of the educational institution.

We hear and read much these days about fringe groups without essential education and training, who feel that they are *qualified* to assume the duties that the physical therapist is trained to do in the medical field. The physical therapists, and most discerning physicians with whom they work, know this is far from true. The best answer to this challenge of standards is to insure an ample supply of graduate physical therapists each year to offer superior professional services for the sick and handicapped. Instructors in all areas will be helping to maintain physical therapy on a high professional level, where patient care and medical practice is governed by medical ethics and an established code of conduct which have existed for thirty years. The contrast between a well prepared ethical physical therapist and a poorly prepared nonprofessional will continue to be recognized and appreciated.

A new instructor may develop her teaching talents by observing and assisting in classes conducted by a more experienced individual.



Laboratory practice classes give the less experienced instructor a good opportunity to learn teaching methods, gain confidence and classroom poise, while making a definite contribution to the teaching program.

Teaching opportunities also offer security, good financial return, and professional recognition. Most technical directors and instructors hold academic appointments in their respective colleges and universities, and all hold places of respect and leadership within the administrative structure of the school with which they are affiliated.

QUALIFICATIONS

What are the recommended qualifications of teaching personnel for approved schools of physical therapy?

TECHNICAL DIRECTORS with full time responsibilities

A. Personal Qualifications

1. Good general health.
2. Ability to work with people.
3. Organizational ability.

B. Professional Qualifications

1. Baccalaureate degree for new appointments.
2. Minimum of five years of general experience. The Technical Director should possess a general knowledge and appreciation of the full scope of physical therapy in order to arrange a well-rounded educational program. He is not expected to be skillful in nor an authority on all phases of physical therapy. The wise director will complement his knowledge by adding to the school's staff, physical therapy instructors with special interests and knowledge in other areas.
3. Some advanced study: specialized courses, and/or an advanced degree is desirable.
4. Training in educational tests and methods.
5. Previous teaching responsibility in a physical therapy curriculum is desirable.
6. Affiliation with professional organizations.

PHYSICAL THERAPY INSTRUCTORS—full time or part time

A. Personal Qualifications

1. Good general health.
2. Ability to work with people.

B. Professional Qualifications

1. Baccalaureate degree for new appointments.
2. Minimum of three years of general experience. This period of time, if it consisted of good clinical experience, should give the new instructor a background of practical physical therapy. The technical skills of a capable physical therapist come from experience based on a sound educational background, and therefore cannot be fully absorbed or developed within a short period of time.

a. One year of specialized experience in technics of the procedure to be taught is desirable: for example, in cerebral palsy, muscle reeducation, electrical stimulation, gait training.
b. The instructor should have special preparation if he is expected to assist in a basic science class of anatomy or physiology.

3. Training in educational methods and tests is desirable.
4. Affiliation with professional organizations.

BENEFITS TO THE TEACHER

What then should a qualified individual expect to receive in the way of personnel policies?

1. Both the technical director and instructor should receive faculty appointments in line with their professional and educational achievements.
   a. These should be for a stated period of appointment with provisions for resignation, or request for withdrawal open to both employee and employer.
   b. An opportunity for academic promotion or advancement.
2. One month's vacation per calendar year for all full time teaching personnel.
3. Sick leave (hospital insurance).
4. Retirement insurance or annuity plan.
5. Clearly defined areas of function to permit adequate time for preparation of teaching materials. An instructor should not be expected to prepare for all classes following a full working day, even though teaching personnel cannot be expected to be on a strictly hourly basis.
6. Opportunities for inservice education, postgraduate courses, sabbatical leaves, and attendance at professional conferences.
7. Salaries should be commensurate with similar appointments in other areas of the college or university program. Periodic increments should be outlined.
   a. Technical Director
      —recommended $4500-$5500
   b. Instructor—recommended $3800-$4500

These recommendations were adapted from "Suggested Requirements for Teaching Personnel in Physical Therapy Schools" approved by a conference of Medical and Technical Directors of Physical Therapy Schools in June 1946 at Blue Ridge, North Carolina, and are in line with those included in the 1951 publication "Organizational Guide for Physical Therapy Schools." They have been approved by the Advisory Committee to the Educational Consultant (Chairman School Section, Chairman Committee on Education, past Educational Consultant).

We wish to express our appreciation to the University of Wisconsin Medical School for the photographs used in this paper. They were made under the supervision of Margaret A. Kohli, Technical Director, Section of Physical Medicine.

Our Book Reviewers for April

Josephine J. Buchanan, M.D., Chief, Department of Physical Medicine and Rehabilitation, Gallinger Municipal Hospital; Assistant Professor of Physical Medicine, George Washington University School of Medicine, Washington, D. C.

A. William Reggio, M.D., former Director of Physical Medicine and Rehabilitation, U.S. Public Health Service, Washington, D. C.

William J. Shriber, M.D., Assistant in Medicine, Physical Medicine, Massachusetts General Hospital, Boston, Mass.

Major Beatrice Whitcomb, WMSC, Instructor of Physical Therapy, Medical Field Service School, Fort Sam Houston, Texas.

School Section

Theses and Research Papers

Compiled by Margery L. Wagner and Sarah Semans
Editorial Committee, School Section

The following compilation of titles of graduate theses and research papers written by physical therapists carrying on graduate studies is presented as a contribution to education by the School Section. These are published as a reference list for all who seek additional resource material for purposes of teaching, research, inservice training, and clinical application.

Sole credit for the securing of the information and subsequent listing of titles, authors, and sources is given to Margery L. Wagner, Chairman of the Editorial Committee of the School Section. Mrs. Wagner is the technical director, and Miss Semans is a member of the faculty of the Curriculum in Physical Therapy, University of California School of Medicine, San Francisco.

—DOROTHY E. BAETHKE
Chairman, School Section

Questionnaires requesting the listing of theses and research work carried on in schools of physical therapy throughout the country were directed to the technical directors of approved schools. The results of these questionnaires were divided into four categories:

1. Schools not offering graduate work
2. Schools offering graduate work but no theses written
3. Schools which did not answer questionnaire
4. Theses and research work listed

Fourteen schools returning questionnaires indicated that no graduate work was offered.

The University of California School of Medicine, San Francisco, and New York University, School of Education, New York offer graduate work but no theses have been written.

At New York University candidates for the M.A. degree are not required to write theses. They may do so, or they may elect an additional four hours of credit. To date all have made the latter selection. However, research studies have been carried on by former students and those reported have been listed.

Three schools did not return the questionnaire. These schools do not offer graduate work and it has been assumed that no research papers have been prepared by students attending these schools.

Below are listed the theses and research papers reported. These have been divided into four categories:

1. Clinical Problems
2. Basic Science
3. Technics and Practices
4. Education

Research done in partial fulfillment of requirements for advanced degrees are indicated as follows:

*—Master's degree
†—Ph.D. degree

Clinical Problems

* 1. A STUDY OF ABNORMAL BREATHING PATTERNS IN POLIOMYELITIS,
Anna J. Jannett. June 1951. University of Southern California. Inter-Library Loan Service.

* 2. NORMAL AND ABNORMAL MOTOR DEVELOPMENT IN INFANCY,
Elizabeth Zausmer. Not yet completed. Boston University School of Education. Will be available from library of Boston University School of Education.

3. THE USE OF ELECTRICAL AND MECHANICAL MUSCULAR FORCES FOR THE CONTROL OF AN ELECTRICAL ARM PROSTHESIS,
Norman Berger and Curtis R. Huppert. Prosthetic Research Division, College of Engineering, N.Y.U. Direct inquiries to authors.

4. VASCULAR CHANGES IN THE STUMP OF ABOVE-KNEE AMPUTEES FOLLOWING AN EXERCISE PROGRAM,
Curtis R. Huppert. See above.

5. EVALUATION OF ABOVE-KNEE AMPUTEES,
Joint study by all members of research staff

of Prosthetic Research Division, College of Engineering, N.Y.U.

6. SHAKEDOWN TEST OF THE NAVY ABOVE-KNEE PROSTHESIS,
Curtis R. Huppert. See above.

7. SHAKEDOWN TEST OF THE NAVY BELOW-KNEE PROSTHESIS,
Curtis R. Huppert. See above.

† 8. GAIT EVALUATION OF UNILATERAL ABOVE-KNEE AMPUTEES,
Curtis R. Huppert. See above. Not yet completed.

9. SURVIVE TESTS OF HYDRAULIC DEVICES FOR ABOVE-KNEE AMPUTEES,
Curtis R. Huppert. See above.

* 10. THE EFFECT OF LOWER EXTREMITY AMPUTATION ON STANCE STABILITY AND STANCE MECHANICS,
Emily E. Mueller. July 1949. Medical College of Virginia. Inter-Library Loan Service.

* 11. THE INFLUENCE OF LOWER EXTREMITY AMPUTATION ON THE LOCATION OF THE CENTER OF GRAVITY OF THE BODY AS A WHOLE,
Ida M. Summers. July 1949. Medical College of Virginia. Inter-Library Loan Service.

* 12. MOTOR AND SENSORY THRESHOLDS OF ALTERNATING CURRENT STIMULATION IN MAN,
Beryl E. Baumgartner. University of Wisconsin. University of Wisconsin Reference Library.

* 13. ALUMINUM CHLORIDE ION TRANSFER—IONTOPHORESIS FOR HYPERHIDROSIS OF SOLES AND PALMS,
Emma G. Lentzer. University of Wisconsin. University of Wisconsin Reference Library.

14. MAKING MANPOWER: VOCATIONAL REHABILITATION OF THOSE HANDICAPPED BY CEREBRAL PALSY,
Mary Eleanor Brown, George G. Deaver. *Archives of Physical Medicine*, December 1942. Vol. XXIII, No. 12, 719-28.

15. A MUSCLE TESTING BOARD,
Mary Eleanor Brown, Robert L. Thompson. *The Physiotherapy Review*, Vol. 23, No. 4, July-August 1943.

16. PHYSICAL DEMANDS OF DAILY LIFE: AN OBJECTIVE SCALE FOR RATING THE ORTHOPEDICALLY EXCEPTIONAL,
Mary Eleanor Brown, George G. Deaver. Studies in Rehabilitation No. 1, Institute for the Crippled and Disabled, New York, N. Y. 1945.

17. PAST AND PRESENT CRUTCHES,
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Improving College Instruction*

Numerous suggestions for improving college instruction resulted from a recent conference in Chicago.[1] The conference was held in the hope that out of it would come "a greater awareness of the present strengths and weaknesses of the services of college faculty members, a better understanding of the problems to be solved in making the college teacher more effective, and a clearer delineation of the kinds of reasearch and experimentation needed in finding solutions to these problems."

The Conference

The conference was sponsored by the American Council on Education and the Office of Education, Federal Security Agency. A total of 108 persons, selected on the basis of their known interest in the improvement of college teaching, participated.

The main feature of the conference was a series of discussions by six study groups, each devoted to one phase of the problem. An analyst for each study group had prepared a statement on the topic assigned to the group, a multigraphed copy of which had been sent to each conferee before the conference. A recorder for each group prepared a summary of the discussions.

Two addresses were given to the conference. Ordway Tead, chairman of the Board of Higher Education of New York City, at a dinner meeting, discussed the role of the college teacher in our culture, and at a luncheon meeting, Irving Lorge, executive director of the Institute of Psychological Research, Columbia University, spoke on the psychological bases for learning. At the closing session, John Dale Russell, director of the Division of Higher Education, Office of Education, summarized the recorders' reports of the study groups, and a panel of educators discussed issues raised by the conference.

The following six sections present brief summaries of the discussions reported.

Clarification of Program and Course Objectives

In efforts to improve the effectiveness of college faculties there is no substitute for the continuing study and review of educational objectives. Such appraisal is most effective when it combines both inductive and deductive approaches. It produces the best results when the examination is made cooperatively so as to involve all persons connected with the program.

Two ideas should be considered in establishing educational objectives. First, each college exists in, and is supported by, a society; its educational objectives must therefore include service to social needs. Second, colleges operate primarily through individual persons and for their growth, and the health and culture of society develop from the lives of persons who share it; therefore, service to the intellectual and spiritual development of persons, both students and faculty members, is a determining factor in establishing educational objectives.

Educational objectives must be definite, but they must not be narrowly conceived. Among the functions which will be accepted in varying combinations by different colleges are instruction, research, the perpetuation of culture, and acculturation. Objectives must be related organically to the functions which the college accepts. In general, the leading function of a college is teaching, but investigation —whether factual research, conceptual inquiry, or creative activity—has a place in the context of teaching, as has also the public service function of the college and its faculty. Both of these functions, however, can and should be so carried on as to result in the improvement of instruction.

The adoption of a clear set of educational objectives should not exclude diversity of view. It is recognized, nevertheless, that at times there will be limits of tolerance of diversity in relation to the purposes of the college. As an example, a church-related college is not likely to tolerate instruction that runs entirely counter to the point of view held by the group which controls and supports the institution.

Stated objectives and actual practice should continually be checked against each other and correlated. Along with the effort to determine what the objectives of a college should be, effort should be made to discover the actual objectives through an examination of prevailing practices. The actual objectives and the stated objectives can then be compared, with a view to modifying either or both.

Teaching Methods and Organization of Instructional Materials

A number of factors in American life have stimulated search for ways to improve curriculums and teaching procedures in colleges. Among these factors are: (1) Popularization and democratiza-

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[1]The Conference on Improving the Effectiveness of College Faculties, December 7-9, 1950. A full report of the conference, including the addresses, the statements made by the analysts, the reports of the recorders, and the resolutions adopted, will be published in the near future by the American Council on Education under the title "Improving College Instruction."

tion of higher education in the last few decades; (2) the attendant changing concepts of the purposes of higher education in America; (3) dissatisfaction with the products of colleges; (4) increased knowledge in such fields as psychology, social anthropology, and communication, in relation to learning processes; and (5) the general expansion of knowledge in all fields, which compels a re-evaluation of what knowledge is of greatest importance for accomplishing a college's objectives. Inasmuch as it is becoming necessary to teach more material to students, ways must be found to do the teaching more effectively.

Improvement is being made through the reorganization of curriculums, programs, and courses. The "general education" movement in particular has stimulated appreciation of a need for improved teaching. The courses in this phase of education should be so organized that they serve well as a background for the uses which various types and groups of students will have for them. In reorganizing curriculums and courses, a faculty should consider of primary importance measures which will bring the student to a realization of his own responsibility for integrating his educational experiences. Participation in curriculum organization can be helpful to the teacher. The elimination of "educational deadwood" should result from continual departmental checking on outmoded courses.

The relative effectiveness of the different methods of teaching (lecture, discussion, conference, laboratory, clinic, and others) depends largely upon the specific objectives of the instruction. All of these methods are useful under certain conditions and to accomplish certain purposes. Each instructor may well be called upon to justify the use of the particular methods he employs.

Evaluation of Student Progress in Relation to Objectives

The improvement of techniques of educational evaluation depends directly upon clarification of the objectives of teaching. Indeed, when the goals are clarified, satisfactory evaluation techniques become possible for the first time. Then also these techniques are likely to be improved. At those colleges where such clarification has gone on, examinations have generally been improved, and they have been used to test much more than the possession of mere isolated information.

Recent developments in the field of evaluation have stimulated the improvement of curriculum materials. The teacher who carefully analyzes the results of examinations and other means generally employed for appraising the achievements of students almost inevitably obtains new insights into the learner's problems and is therefore enabled to see what appropriate teaching materials and methods should be used.

One of the best ways to secure faculty interest in educational evaluation is to have everyone on the teaching staff participate in developing the process. Evaluation should be recognized as being as essential to teaching as is the preparation of lecture notes, and faculty members who participate in the development of evaluation instruments should have their efforts recognized and appropriately rewarded. Maximum use of the results of evaluation may be assured only if the faculty participates in the evaluation program.

Institution-Wide Service Agencies

Teaching effectiveness can be advanced materially through institution-wide services of several kinds. Among the special service centers or agencies that can be used are: testing service, institutional research bureau, counseling service, library, audio-visual center, consultants or advisory boards from outside the institution, faculty workshops or conferences, planning agencies on development and uses of physical plant, institution-wide committees on matters of concern to the whole faculty, public-service agencies that involve direct participation of faculty members, and agencies to assist in field services and projects. While the foregoing list includes some of the more important service agencies, it is illustrative and suggestive rather than inclusive. The number and kinds of agencies will vary among institutions according to their objectives, size, programs, complexity, and other factors. It is important that the central service agencies in a particular institution arise from the cooperative study and planning of faculty and administration.

Seven basic principles which seem to be applicable to all university-wide service agencies having functional relationship to the instructional program are: (1) There must be continuous and effective communication between the service agency and the teaching faculty. (2) The teaching faculty should participate actively in developing policy for the service agency and in guiding, using, and interpreting its services. It is desirable that there be a faculty committee to work with each service agency. (3) Wherever possible the service agency and the related faculty committee should contribute positively to the in-service growth of faculty members. (4) In addition to continuous evaluation of its services by the agency and the related faculty committee, there should be periodic, effective evaluation by other faculty groups or by

outside agencies. (5) The college administration should be continuously alert to the potential values of the service agency, to the point of providing budgetary support and institutional recognition. (6) The service agency should be organized and located with primary reference to its potential contribution to instructional efficiency within the particular institution. (7) Within a particular service area, all related functions should be correlated and coordinated through the institution-wide agency.

Evaluation of Teaching Effectiveness

Important values are to be gained by further development and judicious application of several techniques of appraising the effectiveness of college teaching. A most obvious result of such activity is that it directs attention to good instruction; it causes both faculty and students to think and talk about good teaching.

In the evaluation of teaching effectiveness the emphasis should be on the maintenance and improvement of morale rather than on the determination of status of faculty members. Faculty members are necessarily or inevitably appraised by administrative officers, often upon very fragmentary evidence. The development and use of better techniques of evaluating teaching will tend to make these necessary judgments less perfunctory and more reliable. The primary aim of the use of evaluation techniques, however, is to stimulate college teachers to upgrade their own effectiveness, and the administration should espouse this as the main purpose of any plan of evaluation of teaching which it may adopt.

Two extremes should be avoided in the administration of an evaluation plan. One of these is the indiscriminate publicizing or careless or tactless handling of the results, for such action can produce great harm. The other extreme is the perpetuation of the persistent notion that a teacher's procedures are strictly and solely his own affair, in which the advice of his students and colleagues has no place. Such a notion is certain to limit the growth of a college teacher and impede the progress of the institution toward its educational goals.

Three procedures are recognized for the evaluation of teaching effectiveness: (1) the collection and study of student opinion; (2) systematic evaluation by faculty colleagues based upon adequate classroom visits; and (3) the collection and study of judgments of alumni. Each of these procedures has distinct limitations as a means of evalution, but each, if properly employed, can be useful.

Institutional Conditions Favorable to Faculty Improvements

A good program of in-service education originates in a desire for self-improvement shared by each member of the staff. It flourishes when it is definitely planned as a well balanced cooperative effort on a long-term basis.

Among the practices and arrangements which contribute to the development of these conditions are: (1) A program of orientation and continuing opportunity for counseling for professional personnel new to the institution; (2) adequate provision of materials of instruction and essential equipment; (3) availability of sufficient clerical and technical service to permit individual faculty members to make the most effective use of their time, energy, and professional talent; (4) flexible and generous leave policies designed to encourage professional growth of faculty members; (5) definite policies concerning widened opportunities for travel and attendance at professional meetings; (6) a salary and promotional schedule based upon merit and special service considerations as well as upon length of tenure; (7) interdepartmental and interdisciplinary cooperation through joint staff conferences, joint committee work, and joint staff seminars; (8) adequate support for significant experimentation and research; (9) a council of qualified personnel, drawn from the several departments of the institution and from outside agencies, available to individual staff members as consultants on educational problems; (10) an effective system for the distribution of current professional books, pamphlets, periodicals, and other materials to staff members.

Many desirable institutional conditions contribute to the effectiveness of a faculty, among which are: (1) An atmosphere of freedom of thought, inquiry, and expression conducive to creative productivity; (2) extensive faculty participation in the planning and management of affairs of the institution and its community; (3) an understanding of realms of responsibilities of all members of the professional family—the governing board, the administration, the instructional and creative studies staff, and special services personnel; (4) generous recognition for faculty services, promoting a sense of belonging to an important group and a feeling of satisfaction in work accomplished; (5) policies of promotion, tenure, and retirement that will reduce the fear and frustration arising from economic and social insecurity and help to maintain academic mobility; (6) opportunities for responsible student participation in those aspects of the educational program in which students might be expected to make a definite

contribution; (7) maintenance of a free flow of information, ideas, and suggestions within the institution and between the institution and outside agencies; (8) active promotion of studies dealing with teaching and other institutional problems, bringing together individuals from different departments to study some of their common needs and thereby to develop greater insight into teaching goals and processes.

Resolutions

At a conference on the preparation of college teachers, in Chicago, December 8-10, 1949, a resolution was adopted authorizing the chairman of the conference "to appoint a committee, including representation from the United States Office of Education, to negotiate with the American Council on Education with a view to the establishment, through the Council, of a Commission on the Preparation of College Teachers." At the recent conference it was reported that the establishment of such a commission has been under discussion but no final action has been taken.

The recent conference adopted the following resolution:

"That this Conference on Improving the Effectiveness of College Faculties reaffirm the purpose of the Resolution adopted by the Conference on the Preparation of College Teachers, December 10, 1949, asking for the establishment through the American Council on Education of a Commission on the Preparation of College Teachers.

"Since the in-service development of college and university faculty members is intimately related to their preservice preparation, the proposed Commission should deal broadly with the total problem.

"To encourage the creation of the Commission as promptly as possible, the Conference requests that a committee consisting of Dean Harry J. Carman (Chairman), Dean Theodore Blegen and Commissioner Earl J. McGrath, be asked to confer with the American Council on Education concerning the matter."

Another resolution adopted by the recent conference is:

"That the American Council on Education be urged to disseminate the report of this conference as widely as possible. To reach the largest possible audience, it is strongly recommended that the Council seek the cooperation of the journals of professional organizations in carrying reviews and articles dealing with the findings of the Conference."

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(Continued on page 202)

Criteria for Advancement and Promotion of the Teaching Staff*

E. Kent Springer

A faculty committee at the University of Southern California, appointed in 1948, outlined a statement of criteria to determine the merit of faculty members for advancement and promotion, which was accepted in 1950 by the university senate and the president of the university. These criteria served as a basis for reviewing the status of each faculty member prior to the preparation of the 1950-51 budget requests. The criteria, quoted verbatim, are:

1. *Teaching performance.*—A major factor in determining advancement and promotion is teaching performance, considered under these subheads:

Competence in the conduct of classes and seminars, including the ability to lecture, to lead discussion, to make appropriate assignments of work, to organize the general program of the course, and to evaluate student achievement.

Effective relations with the student individually as well as in groups in providing academic guidance and in stimulating intellectual curiosity and growth.

Development of adequate teaching aids, including course outlines, syllabi or textbooks, demonstrations, charts or other visual devices, and organization of laboratory facilities.

2. *Research and professional activity.*—A major factor in determining a faculty member's merit for advancement and promotion is the contribution he makes in the form of research and other professional leadership. It is recognized that the nature and value of such activity will vary from one academic field to another, and that, therefore, each distinctive subdivision of the university will have to amplify and implement these criteria for its own use.

Recognition is given to the research contribution of the faculty member whether made individually, as a member of a group, or through the supervision of graduate student research. Since publication usually is the normal expression of a faculty member's research activity, it will be considered as a primary measure. However, a faculty member's research program and unpublished research will also be recognized.

Recognition is given for leadership in the recognized professional societies of a faculty member's teaching field, whether in the form of effective participation in annual meetings, membership on committees, or the holding of office.

3. *University service.*—Examples of University service are participation in departmental, school, college, and university committees and administrative posts, in the university senate, its committees and administrative posts, and acting as representative of the university to off-campus groups.

The faculty member is expected, as a good academic citizen, to be concerned with the problems of and to participate in the conduct of his department, school, college, and the university. This participation is expected to increase with rise in rank. For these reasons, such service is recognized as a factor leading to advancement and promotion only to the extent that it is above average in quality and in the amount of time consumed.

4. *Community activity.*—Community service is recognized as a factor leading to promotion to the extent that it (a) improves the professional standing of the individual, or (b) contributes to the prestige of the university.

Because each faculty member is expected to be a good citizen, his civic activities, personal hobbies, and recreational pursuits are not considered in relation to promotion.

5. *Training and experience prior to coming to USC.*—A faculty member is appointed or promoted to professional rank, i.e., assistant, associate, or full professor, normally only after he has obtained the higher degree appropriate to his field, such as the Ph.D. in the letters, arts, and sciences.

A faculty member whose higher degree was conferred upon him by this institution, commonly is appointed or promoted to professorial rank only after he has had substantial experience in his field elsewhere.

Promotion is made upon merit demonstrated at this institution, rather than upon previous performance elsewhere. No faculty member is brought in from outside with the promise, expressed or implied, of promotion to follow.

6. *Years of service at USC.*—There is no minimum period of service within each rank prior to promotion. Years of service alone are not considered as a positive factor counting toward promotion.

At the beginning of the third year as instructor, or at the time of the second renewal of the annual contract, the faculty member is given notice of

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Associate professor of mechanical engineering, University of Southern California. Professor Springer was a member of the Committee on Criteria for Merit for 2 years and chairman for the year 1949-50.

termination or promotion to follow at the end of the year.

At the beginning of the third year as assistant professor, the faculty member is given notice of termination or of reappointment as assistant professor for a period not to exceed 2 years beyond the original 3. At the beginning of the fifth year as assistant professor, the faculty member is given notice of termination or promotion to follow at the end of the year.

An associate professor has tenure, unless he is brought in at that rank from outside. In such case, he shall not have tenure until he has been here for a specified period, normally of 1 year and not to exceed 3 years, and in case of termination, at least 1 year's written notice shall be given.

7. *Professional growth and leadership.*—Beyond these specific criteria, as a transcendent requirement, it is to be emphasized that a faculty member is promoted only on the basis of tangible evidence of continuing growth culminating in recognized leadership within his professional field and within the community. He is not promoted to the full professor rank until this culmination has been achieved and he has professional recognition as an authority in his field.

Trends in Physical Therapy Education

As physical therapy has developed and required a stronger scientific background it has seemed important to recommend that instruction should be only in universities having medical schools or in strong teaching hospitals. Such is the case of the 28 approved schools today. If an undergraduate wishes to obtain a degree in physical therapy, he must spend at least two of a total of four years in a school of physical therapy connected with a university or college offering the degree. Several physical therapy schools offer this two year plan. While this is a very wise arrangement, in many cases it does not meet the requirements of all possible students. For instance, it is beyond the resources of many students to transfer to a university in a distant state and to pay out-of-state tuition fees for the two years.

A second existing plan requires the student to spend four years obtaining a degree in some other field of study, then a fifth year devoted to physical therapy education.

It is much more desirable to obtain both physical therapy education and a baccalaureate degree in four years. This opportunity should be made available in more of the well established universities, but the spread of physical therapy courses in institutions not equipped to uphold the necessary standards should be avoided. A four year program is being adopted by progressive colleges and universities which recognize and are attempting to meet the educational needs of their physical therapy students.

A fairly simple plan is in effect in at least nine institutions. While they do not have the facilities or perhaps the desire to establish curriculums in physical therapy, they have made cooperative arrangements with schools approved by the American Medical Association whereby their students may obtain a degree in four years. Under this plan, three years of general education are completed by a student in one of these colleges. During this time he satisfies most of the degree requirements for the particular university which he is attending as well as prerequisite education for physical therapy. In the fourth year he transfers to the cooperating school of physical therapy. At the completion of the fourth year he becomes an accredited physical therapist and is granted a baccalaureate degree with major work in physical therapy from the institution where he completed his preliminary work. Under many of the existing plans he could never have satisfied the degree requirements at the school of physical therapy in a single year.

One example of this plan is in effect at the Medical College of Virginia which offers this program to students from two schools, Richmond Professional Institute of William and Mary College, and Mary Washington College of the University of Virginia.

Several colleges are planning an even more liberal program whereby the student is permitted to attend for the fourth year the American Medical Association approved school of his choice.

The program may make it possible for students to benefit from reduced fees for state residents for three years with only a possible additional year required to be spent out of the state. This plan might fit very appropriately into the pattern of regional education now functioning in the

South and West. In these areas, at the present time, medical, law students, and others obtain their professional education in this manner. Thus a well established school of physical therapy in a university might be granting baccalaureate degrees in physical therapy to its own four year students, and at the same time educating physical therapy students from several cooperating colleges.

The educational services of the American Physical Therapy Association are available for consultation regarding such programs.

Scholarships for Short Term Courses In the Care of Poliomyelitis Patients

The National Foundation for Infantile Paralysis has just announced that scholarships will be available in 1952 to qualified graduate physical therapists and occupational therapists who need financial assistance to attend short term courses in the care of poliomyelitis patients. Only citizens of the United States who plan to work in this country after completing the training will be eligible. A minimum of two years of clinical experience is required as a prerequisite. In addition, physical therapists must have senior registration by the American Registry of Physical Therapists and/or membership in the American Physical Therapy Association; occupational therapists must be registered by the American Occupational Therapy Association.

These scholarships will cover transportation and cost of room and board, as well as tuition where charged. Veterans will be expected to use their G.I. educational benefits for courses of three months' or more duration, and therefore will be entitled only to supplementary scholarships. It will be the responsibility of all applicants to arrange their own enrollment directly with the training centers they wish to attend.

Qualified candidates should write to the Professional Education Division of the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, New York, for application blanks.

Long Term Fellowships

Available to physical therapists who wish to prepare for teaching or supervisory positions in schools of physical therapy approved by the Council on Medical Education and Hospitals of the American Medical Association.

Requirements for Eligibility

A. Must be a member of the American Physical Therapy Association and/or the American Registry of Physical Therapists.
B. A baccalaureate degree (except for candidates who completed physical therapy training prior to 1940).
C. A minimum of three years of satisfactory general experience as a physical therapist.
D. United States citizenship.
E. Age limit: To be determined by the Committee with reference to individual qualifications.
F. The proposed program should be developed by the Medical and Technical Directors of an approved school of physical therapy which has a college or university affiliation. The program should include advanced study in some advanced basic science, a course in educational methods, as well as some practice teaching. It is recognized that every program must be planned on an individual basis to meet the needs and desires of the applicant. All recipients must agree to accept employment on the instructional staff of a school of physical therapy, either in the academic or clinical aspects of its program.

This fellowship may cover tuition, an allowance for books, and a monthly stipend for maintenance.

Short Term Fellowships

Available to physical therapy instructors now employed in the approved schools.

Requirements for Eligibility

A. Membership in the American Physical Therapy Association and/or the American Registry of Physical Therapists.
B. Membership in the instructional staff of an approved school of physical therapy.
C. Written approval of the proposed program by the director of the school where the applicant is employed must be sent to the National Foundation before the application can be submitted to the Awards Committee.

These fellowships include tuition, traveling expenses, books, and, where necessary, a monthly stipend for maintenance.

For further information regarding these fellowships write: Professional Education Division of the National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5, New York.

POSTGRADUATE COURSES FOR PHYSICAL THERAPISTS

Educational opportunities open to qualified graduates of courses in physical therapy approved by the American Medical Association and/or members of recognized professional associations are accepted in most instances.

SHORT TERM COURSES

Qualified foreign trained physical therapists are accepted for courses marked *

Training Center	*For detailed information & for enrollment contact:*	*Scheduled Courses*
Poliomyelitis		
The Children's Medical Center Boston, Massachusetts	Shirley Cogland Technical Director Physical Therapy Department	4 weeks, 3 months or 6 months beginning July 9, 1952. 4 weeks—$75 3 mo.-6 mo.—$150 Scholarships available
Orthopaedic Hospital 2400 South Flower Street Los Angeles 7, California	Susan G. Roen Director of Physical Therapy	One week courses February 11-15 May 19-23 October 20-24, 1952 $15 Tuition Scholarships available
Georgia Warm Springs Foundation Warm Springs, Georgia	Robert L. Bennett, M.D.	3 or 6 months to begin first Monday in January, April, July and October. No Tuition Maintenance scholarships are available
University of Southern California Los Angeles 7, California	Charlotte Anderson Department of Physical Therapy	3 week courses Details—unconfirmed Dates on request
D. T. Watson School of Physiatrics Sunny Hill, Leetsdale Pennsylvania	Lucille Cochran Administrator	1 to 6 weeks depending on experience—dates on request $10 Registration $10 per week—tuition
University of Colorado School of Medicine Denver, Colorado	Winona Campbell, M.D.	3 weeks to begin June 16 to 23 (subject to change) $20 Tuition Scholarships available
Cerebral Palsy		
Children's Rehabilitation Institute Cockeysville, Maryland	Registrar	3 months to begin April 7, July 7 and October 6 Tuition $150 *
Lenox Hill Hospital 111 East 76 Street New York 21, New York	George Deaver, M.D.	Dates of attendance personally arranged No Tuition
M. A. Perlstein, M.D. 4743 North Drake Chicago 25, Illinois	Dr. Perlstein	3 months to begin January, April, July, October Dates on request $100 a month *

Training Center	*For detailed information & for enrollment contact:*	*Scheduled Courses*
Cerebral Palsy		
Coordinating Council for Cerebral Palsy 270 Park Avenue New York 17, New York in conjunction with Columbia University	Marguerite Abbott Executive Director	3 months to begin September 22, 1952 $250 Scholarships available
Psychosomatic Aspects of Physical Therapy		
Duke University School of Medicine Durham, North Carolina	Director of Physical Therapy— Duke Hospital	5½ days—June 9-14, 1952 $10 Tuition Registration Limited
Advanced Technics in Rehabilitation		
Institute of Physical Medicine and Rehabilitation New York University Bellevue Medical Center 34th Street and First Avenue New York, New York	Edith Buchwald Director of Rehabilitation Courses for Physical Therapist	4 weeks Oct. 27-Nov. 21, 1952 Jan. 5-Jan. 30, 1953 April 13-May 8, 1953 $62 Tuition *
Advanced Technics in Rehabilitation (Amputations and related problems)		
Kessler Institute for Rehabilitation Pleasant Valley Way West Orange, New Jersey	Signe Brunnstrom Director of Physical Therapy	1, 2 or 3 months beginning Sept. 1, Feb. 1 $25 Tuition per month *
Technics in Neuromuscular Reeducation		
The Kabat-Kaiser Institute 2600 Alameda Street Vallejo, California	Margaret Knott Chief Physical Therapist	3 months to begin October 1, January 1, April 1 and July 1 $150 Tuition *

GRADUATE DEGREE COURSES

Enrollment limited to qualified graduates of Courses in Physical Therapy approved by the American Medical Association. Applicants must meet requirements for graduate study in each instance.

Location	*Whom to Contact*	*Major Subject*	*Degree Granted*
University of California Berkeley, California	Director, Graduate Division	Anatomy, physiology, physics, etc.	Master of Science
University of Colorado School of Medicine 4200 East Ninth Avenue Denver, Colorado	Dorothy Hoag Technical Director School of Physical Therapy	Physical therapy major and physiology minor. Anatomy major and physical therapy minor.	Master of Science Master of Science
Duke University Durham, North Carolina	Division of Physical Therapy—School of Medicine	Physiology related to physical therapy	Master of Arts Doctor of Philosophy

Location	*Whom to Contact*	*Major Subject*	*Degree Granted*
State University of Iowa Iowa City, Iowa	School of Physical Therapy	Physiology or anatomy related to physical therapy	Master of Science
Medical College of Virginia Richmond 19, Virginia	Chairman, Graduate Study Committee	Physical Therapy	Master of Science in Physical Therapy
New York University School of Education New York 3, New York	Elizabeth C. Addoms	Physical Therapy, Biological Science, Education, Social Science	Master of Arts
Northwestern University Medical School 303 E. Chicago Avenue Chicago 11, Illinois	Stafford L. Osborne, Ph.D.	Physiological Chemistry Physiology Anatomy Research in Physical Therapy	Master of Science in Physical Therapy
University of Southern California Los Angeles, California	Office of Admissions Graduate School and Department of Physical Therapy	Physical therapy or anatomy, physiology, education, physical education	Master of Arts
Stanford University Stanford, California	Director, Division of Physical Therapy	Physical Therapy	Master of Arts
University of Wisconsin Madison, Wisconsin	Harry D. Bouman, M.D. Professor of Physical Medicine, University of Wisconsin Medical School	1. Physical Therapy 2. Physical Therapy and Education	Master of Science Master of Science

Elks National Foundation Offers Special Grants to Study Treatment of Cerebral Palsy

The Elks National Foundation of the Grand Lodge, Benevolent and Protective Order of Elks, has announced that grants are available to qualified physical therapists for special advanced courses in the field of cerebral palsy.

The following steps are necessary in filing an application for a cerebral palsy grant:

1. Write a letter of application stating the name and location of the institution the applicant wishes to attend, the course of study he or she plans to take, the date on which he wishes to begin his course, and the duration of the course.

2. The following data must accompany the letter of application:

a. A resume of the applicant's educational background. Indicate the school of physical therapy approved by the Council on Medical Education and Hospitals of the American Medical Association which was attended and the year of graduation.

b. A list of professional experiences as a physical therapist.

c. Several letters of endorsement from responsible people who have observed and formed opinions of the applicant's character, professional abilities, and aptitudes.

d. A letter from the administrative officer of the institution stating that the applicant will be accepted as a student, and, further, that the Foundation check for the amount of the grant will be accepted to establish a credit for the student. It is understood that should the student terminate his studies at the institution prior to the conclusion of the course, the undisbursed amount of the grant will be returned to the Elks National Foundation.

3. The amount of the grant needed, with a breakdown showing tuition and other expenses anticipated.

4. A statement that financial assistance to take the course of training covered by application has not been received from any other organization, and that such assistance is not contemplated.

5. Assurance that the applicant has serious intention of using the training which he will receive in actual work in the field of cerebral palsy.

Similar awards to cover advanced training in other areas—such as speech therapy, occupational therapy, and special education—are also available. The same type of application is required.

Additional information may be obtained from and applications sent to: Mr. John F. Malley, Chairman, Board of Trustees, Elks National Foundation, 161 Court Street, Boston 8, Mass.

Reprints Available

THE FOLLOWING INFORMATIONAL MATERIAL AND ARTICLES ON PHYSICAL THERAPY ARE AVAILABLE WITHOUT CHARGE:

Available to chapters, interested individuals and prospective students by single copies or in reasonable quantities:

PHYSICAL THERAPY—IS THIS THE DOOR TO YOUR FUTURE?—
An illustrated brochure describing the opportunities for a career in physical therapy.

APPROVED SCHOOLS OF PHYSICAL THERAPY—
A list of schools approved by the Council on Medical Education and Hospitals of the American Medical Association.

SUGGESTIONS FOR PROSPECTIVE STUDENTS—
Outlines the professional course of study for college students preparing for physical therapy. Of value to the high school student who is planning a college program.

EMPLOYMENT OPPORTUNITIES—
A brief analysis of the various types of employment opportunities open to the graduate physical therapist.

QUESTIONS AND ANSWERS—
A concise outline describing physical therapy education and applications.

Available to chapter chairmen, vocational guidance counsellors, libraries and other individuals or groups who wish more information on physical therapy than is offered in the above items:

OUR ASSOCIATION—
An informational booklet on the activities, scope and services of the American Physical Therapy Association.

CODE OF ETHICS—
Ethics for the physical therapist of the American Physical Therapy Association.

PERSONNEL POLICIES FOR QUALIFIED PHYSICAL THERAPISTS—
Suggestions as to salary, hours, vacations etc. by the American Physical Therapy Association.

INFORMATIONAL BRIEFS ON SCHOOLS OF PHYSICAL THERAPY—
Admission requirements, costs of education and pertinent information on all approved schools.

SECTION ON EDUCATION—
A list of postgraduate programs offered by the approved schools and a list of specialized courses for physical therapists.

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Attractive, colorful, throw-away bulletin board poster to help vocational guidance and recruiting.

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A complete description of what the physical therapist does, where he works and how he functions in the professional field as well as what type of individual he is. (Single copies are free to counsellors, libraries and chapters; additional single copies 50c each, 10-25 copies 35c each, 25 or more copies 25c each.)

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THE PHYSICAL THERAPY DEPARTMENT FROM AN ADMINISTRATOR'S VIEWPOINT—*Joseph Peters* (No charge)

PHYSICAL THERAPY IN MEDICAL DISEASES OF THE CHEST—*Evelyn A. May* (10c)

PHYSICAL THERAPY IN THE EARLY CARE OF COLD INJURIES—*Mary E. Sacksteder, Capt., WMSC* (10c)

THE ROLE OF THE PHYSICAL THERAPIST IN THE TOTAL CARE OF THE CHILD—*Julius B. Richmond, M.D.* (No charge)

TOYS, GAMES AND APPARATUS FOR CHILDREN WITH CEREBRAL PALSY—*Gladys G. Rogers and Leah Thomas* (10c)

ADMINISTRATION OF A COMMUNITY REHABILITATION CENTER—*Hazel E. Furscott* (10c)

WHEEL CHAIRS—*George G. Deaver, M.D.* (5c)

REHABILITATION OF THE HEMIPLEGIC PATIENT—*Donald A Covalt, M.D.* (5c)

PHYSICAL THERAPY HOME CARE PLAN: ORANGE COUNTY (CALIFORNIA) HEALTH DEPARTMENT *Edward Lee Russell, M.D., and Helen Haiber* (5c)

PHYSICAL THERAPY IN THE PRENATAL PROGRAM —*Gillian Griffith Smith* (5c)

ROLE OF PHYSICAL THERAPY IN CARE OF PSYCHIATRIC PATIENTS—*Lola E. Smith* (5c)

METHODS OF CLINICAL INSTRUCTION IN PHYSICAL THERAPY—*Beatrice E. Whitcomb, Capt., WMSC* (10c)

PHYSICAL THERAPY IN THE HOME—*Arthur L. Watkins, M.D.* (5c)

PHYSICAL THERAPY IN STATE CRIPPLED CHILDREN'S PROGRAM—*Clara M. Arrington* (5c)

THE USE OF LEAD-UP FUNCTIONAL EXERCISES TO SUPPLEMENT MAT WORK—*Morton Hoberman, M.D., Erbert F. Cicenia, Hyman L. Dervitz and Oscar C. Sampson* (10c)

THE REHABILITATION OF APHASICS—*Dorothy Britton* (10c)

Special Materials

BIBLIOGRAPHY ON NATURAL CHILDBIRTH (10c)

READING REFERENCES FOR ELECTRICAL DIAGNOSIS AND ELECTRICAL STIMULATION (10c)

FILM LIST OF SPECIAL INTEREST TO PHYSICAL THERAPISTS AND STUDENT PHYSICAL THERAPISTS

These films may be secured on rental, loan or sale depending on the course. Unless otherwise specified, all films are believed to be 16 mm. (15c)

POLIO ISSUE OF THE *Review* (JULY 1951)—

Contains eight articles by leading physicians and physical therapists. There are thirty-one abstracts from current medical journals. (50c)

SPECIAL FUNCTIONAL ISSUE OF THE *Review* (NOVEMBER 1949)—

Contains eight articles by leading physicians and physical therapists on functional training, crutch walking and wheel chairs. There are twenty-six abstracts of articles on functional training from current medical journals. (50c)

CEREBRAL PALSY ISSUE OF THE *Review* (FEBRUARY 1952)—

Contains six articles by outstanding experts in the field of cerebral palsy. (50c)

PHYSIOLOGY OF THE HEART AND CIRCULATION AND ITS CLINICAL APPLICATION IN PHYSICAL MEDICINE—

A bound edition of the papers presented in a symposium at the 1950 annual conference of the American Physical Therapy Association with introduction by Harry D. Bouman, M.D., Coordinator. ($1.00)

ESSENTIALS OF A HOSPITAL DEPARTMENT—PHYSICAL THERAPY—

This manual is designed to supply broad guidance in planning, installing, equipping and administering a physical therapy department in a hospital. Compiled by experts in many fields and published by the American Hospital Association. (25c to members) ($1.00)

PLAN AND SPECIFICATIONS FOR AN ALL-WELDED STEEL TREATMENT POOL (No charge)

ORGANIZATIONAL GUIDE FOR SCHOOLS OF PHYSICAL THERAPY—

Gives a broad interpretation of the essentials of a physical therapy school as established by the Council on Medical Education and Hospitals of the American Medical Association. (No charge)

All requests should be addressed to American Physical Therapy Association, 1790 Broadway, New York 19, N. Y.

Editorials

In the February issue of the *Review* an article appeared regarding the retirement of Colonel Emma E. Vogel, Chief of the Women's Medical Specialist Corps of the United States Army. Few individuals have had as great an influence on the field of physical therapy as has Colonel Vogel. Her long service with the Army is part of the record but her many contributions to physical therapy cannot be so easily itemized.

From the first, her keen mind and boundless energy and drive have helped to advance and establish physical therapy as an integral part of the best in medical care for the sick and injured. During her years at Walter Reed Army Hospital she proved herself a professional individual, intellectually endowed and highly skilled. She sought the same qualities in those she educated, trained, or directed. Resourcefulness, poise, and administrative ability are still characteristics of physical therapists who have been affiliated with her. Her charming personality and excellent professional contributions make her one of the most admired and respected women in the history of the Army Medical Department.

It is fitting that these remarks should be included in an issue of the *Review* devoted primarily to education. The training program for physical therapists at Walter Reed established after World War I, was due greatly to her efforts, and was one of the first approved by the American Medical Association. The present course at the Brooke Army Medical Center is a continuation of that early program which was discontinued at Walter Reed in 1946. From these courses have graduated many leaders for the military and civilian fields of physical therapy. Curriculums have changed, but to be able to refer to oneself as a "Walter Reed Graduate under Colonel Vogel" still is a mark of distinction that carries a connotation of the finest in education and training, and an appreciation of the importance of physical therapy in the care of the patient. The many hundreds of physical therapists who served with the Army over the years have been fortunate indeed to benefit from her guidance and direction.

Colonel Vogel's efforts were largely responsible for the recognition of the contributions of professional women to the Army Medical Service, and the granting of commission-status to them equal to that of their male colleagues. It was fitting that she should be appointed the first Chief of the Women's Medical Specialist Corps, which is composed of three separate groups—dietitians, occupational therapists, and physical therapists. The messages of praise and congratulations from General Armstrong and Major General Kirk at the recent retirement ceremony are warmly echoed by her many students, associates, and friends in both the military service and civilian field of physical therapy.

Colonel Vogel is a charter member of the American Physical Therapy Association. From the entire membership we extend to her our sincere appreciation for a job superbly done. Her wise leadership and wide vision will long benefit the field of physical therapy. Colonel Vogel is planning to write during the years ahead and a history of physical therapy during World War II is to be her first major project. Our best wishes go with her on her retirement from the military service she loved so well and served so faithfully.

PERSONNEL SHORTAGES and the maximum effective use of the professional physical therapist are problems which we must continue to consider. We have but to look at the past and examine the nature of the growth of physical therapy to see how demands for this service have increased through the years and how these have been met. An evening spent reading the History of the Association, by Ida May Hazenhyer, is one of pleasure and enlightenment, for to read the history of the American Physical Therapy Association is to trace the educational growth of the profession. It is easy to see that physical therapists have directed their future well, have required and obtained the best standards in education and training for the protection of the patients they treat, and for the profession which they serve. Nor have they been reluctant to change curriculums and technics as changing medical treatment indicated.

It is startling to realize that when the American Physical Therapy Association was organized in 1921, there were 245 female members. Today, when about 600 physical therapists graduate each year from approved courses, over 200 of this total are men. This has been true for the past several years. During the first decade, the growth in numbers was slow. In 1930 there were 515 members, but by 1940 the figure had risen to 1,194. The armed forces in World War II demanded and obtained the services of additional hundreds of physical therapists, and the total membership rose to 1,898 by 1945. (Several additional courses were conducted during this emergency to help supply the demands of the Army medical service.)

One very significant fact is that following the war, civilian schools increased in numbers and capacity. Continued high graduation figures were maintained and even increased so that in 1952, the American Physical Therapy Association represents almost 5,000 members of which almost 800 are men. Improvement in the services rendered by the Association, through the establishment of a National Office, also may be credited with having given impetus to this development. It should be pointed out that this voluntary membership organization unfortunately is not supported by all qualified graduate physical therapists. At least 1,000 nonmembers are professionally engaged, and benefit to a small degree by Association activities, even though they contribute nothing to its program.

In spite of the continuing increase in enrollment, civilian and military needs are not being met. Other methods are open to the physical therapy profession, but these must be thoroughly evaluated before large scale efforts are exerted. The joint functioning of the nurse, the occupational therapist, the medical social worker, the physical therapist, and others in the care and treatment of the patient is one of the most effective of these methods. This coordinated effort is an actuality in many areas although in some it still suffers from lip service only.

Another approach to improved clinical coverage and service is through a more effective use of nonprofessional assistants. The average physical therapist loses many hours weekly in functions which should be delegated to a clerk or hospital attendant. The safe and recommended patterns for use of these assistants will not be discussed here. Their employment and the nature of their instruction, which is necessary, must continue to be thoroughly evaluated in order to protect patient care.

We reiterate that physical therapy classes must be filled during the years ahead, and additional strong teaching facilities should be established in selected areas. It should be the wish and responsibility of each physical therapist to encourage an increasing number of qualified students to enter the professional field. The continued development and protection of our profession is the job of each of us.

Association Activities

The Director Reports:

Last month I attended the meeting of the Consultants to the WMSC in Washington. Among the subjects discussed, one had top priority and that was the Corps' need for physical therapists, occupational therapists and dietitians. The need for more physical therapists is a crucial one, as all of you know. We must increase the supply, but until that is done we must strive for equitable distribution.

One fact is certain—the wounded soldier needs physical therapy. As one officer said, "When a boy is hit by a fragment or a bullet, it usually hits a bone." No pictures have to be drawn for a physical therapist to understand that implication. That patient is going to need physical therapy.

Many of us read about Korea without too much thought of the many lads who are taking it for us. To them we all owe something more tangible than —"Thanks for a job well done." Physical therapists have the privilege and opportunity to express their appreciation, as citizens, in service to the soldier who is wounded on the battlefield.

There is no sacrifice involved on the part of the physical therapist who joins the Women's Medical Specialist Corps. She has a good job, is well paid, and enjoys an association with the finest professional colleagues in the country.

She works in a department which has the most up-to-date and finest of approved equipment; subprofessional help is provided for routine duties so that her professional skills may be utilized to the maximum.

In her off-duty hours, she has greater opportunity for stimulating companionship than does the average physical therapist in civilian life. Many of the leaders in the American Physical Therapy Association are or were Army physical therapists —Harriet Lee, Vice-President; Margaret Moore, Educational Consultant, and her successor, Dorothy Hewitt; Jane Carlin, Editor of the *Review* and former Educational Consultant, to name a few.

We should not have to plead for physical therapists to serve in the Women's Medical Specialist Corps. They should be knocking on the door and asking to be considered for an exceptionally fine job opportunity. Joining the regular corps or making the Army a career is not asked; it's like any job in which one would stay a year. It is possible to sign up for just twelve months.

New graduates and recent graduates, here is a splendid opportunity—a good job, and a chance to render a real service to the many young men who were tapped to fight for your country and mine. Write to: The Surgeon General of the Army, Washington 25, D. C. Let's not have vacancies in the WMSC.

I hope all of you are enjoying the *Philadelphia Gazette* as much as I am. I am going to save mine, take them with me to Philadelphia so I will know where I am and how to talk, for apparently languages and customs are different in the countryside north of Philadelphia.

Conference time is drawing closer and in this issue there is a hotel reservation blank. Get yourself a roommate or two and join with your friends in Philadelphia in June.

H.R. 911 and S. 661

There is to date no action on this bill. It is not in committee and we have had no indication that it will be in the immediate future.

The importance of this bill to us as physical therapists was strongly emphasized at the recent meeting of the consultants of the Women's Medical Specialist Corps. This bill has the full support of the American Physical Therapy Association and many others including leaders in Physical Medicine and Rehabilitation. As soon as this bill is in committee and up for action, notice about it will appear in the *Review* in order that individual members may write to their congressmen in support of it.

Last summer it will be recalled that Senator Ives wrote, "No doubt you are aware that both the Senate Foreign Relations Committee and the Senate Armed Services Committee are presently conducting executive sessions on the Korean situation, and until such time as those hearings are out of the way, I do not believe any hearings possible." The implication of that is plain. H.R. 911, however vital and important it seems to us, is not considered to have priority over bills which affect National security.

The American Physical Therapy Association nevertheless continues to work on the bill, since we believe as Mrs. Bolton, co-sponsor of the bill, expressed in a letter to us last summer, "I am hopeful that some action will be taken in the near

future so that many hundreds of professional men now on active duty with the armed forces may take their rightful places with the privilege and status now enjoyed by women nurses."

The bill provides for commissioning of male nurses and male physical and occupational therapists.

Notes on Recent World Conferences

Miss Genevieve Reilly is another of our members who attended various international professional meetings held last summer in Europe. In addition to registering at the Second International Polio Conference, the World Confederation for Physical Therapy, and the International Society for the Welfare of Cripples, she has sent us her impressions of two well known English rehabilitation centers. She writes:

"At the Ministry of Pensions, Queen Mary's Hospital, Roehampton, many amputees are treated and provided with preprosthetic, prosthetic training, and other services. The rehabilitation service is carried out in four different areas. A gymnast conducts classes for general conditioning, while the physical therapist directs the development of the muscles of the involved limb. The walking school provides an instructor to give balance and ambulation training in the same building where the prosthetists function. It seemed ideal to have the prosthetic service in such close proximity with the walking school.

"One was impressed to learn the amputee was given a small car, smaller than the well known Austin, so that he was not dependent upon public conveyances for transportation. The respect that motorist gave these cars on the roadways was obvious.

* * * *

"The Spinal Cord Center of the Ministry of Pensions is located at Stokes Mandeville, fifteen miles outside London. Here along with an excellent recreational program, there is a program of physical and vocational rehabilitation for paraplegics. Here the fine nursing care the patients received, and the physical therapy service were outstanding. It was remarkable to see thirty pillows in the bed of each patient. Not too much time or emphasis was placed on ambulation. The neurologist at the center, Dr. L. Gattman, felt that it was more important for the patient to have mental activity. After vocational training the patients frequently were in a job within a year following the initial injury. Employers in England are required by law to hire a certain percent of disabled people.

"Like the amputee, the paraplegic had his own type of transportation, a three-wheel motor-driven, hand controlled vehicle. A similar type of conveyance would be a boon to handicapped Americans. In a country where the population rides more than in any other nation, such a vehicle, which would not require a fortune to buy, maintain, or store, could easily be provided.

"The physical therapists were well trained at this center. For this reason graduates from Australia, South Africa, Sweden, and Scotland were working there to supplement their knowledge."

From the Department of the Army
Office of the Surgeon General, Washington, D. C.

National Physical Therapy Leader In Washington for Conference

Miss Mildred Elson, Executive Director of the American Physical Therapy Association, was in Washington for the two-day conference with civilian consultants held by the Women's Medical Specialist Corps on January 30 and 31 in the Office of the Surgeon General of the Army.

She attended as consultant for the Physical Therapist Section of the Corps, Miss Mabel MacLachlan, Educational Director of the American Dietetic Association, and Mrs. Winifred Kahmann, President of the American Occupational Therapy Association, being the other consultants participating in the conference.

While procurement of personnel and various aspects of the current Women's Medical Specialist Corps training programs received important consideration in the conference sessions, the subjects presented ranged from physical medicine to hospital management. General approval of the long range procurement plans for the Women's Medical Specialist Corps was expressed, but emphasis was laid on the immediate need for more physical therapists in Army hospitals to aid the rehabilitation of the Korean wounded.

The first day of the conference was given over to informal talks by division chiefs, in the Office of the Surgeon General, whose activities effect Women's Medical Specialist Corps members. Throughout the second day, Miss Elson was in direct consultation with the Physical Therapy Section. This was the second such conference, the first having been held in January of 1951 following the naming of these consultants by the Surgeon General.

Colonel Nell Wickliffe, Chief of the Women's Medical Specialist Corps, presided at the sessions.

Lieutenant Colonel Edna Lura, Chief of the Physical Therapist Section discussed the progress made by her section during the past year and acted as official hostess for the Physical Therapy consultant.

PHILADELPHIA MUSEUM OF ART, PARKWAY

One of the finest of American art museums contains celebrated collections of the art of Europe, Asia and America. Open daily and Sunday, free.

Conference Quiz

Do You Know:

that Philadelphia has six legitimate theaters with a seating capacity of 10,976 and that one of those seats will be reserved for *you* in June?

that Philadelphia has *two* major league baseball teams so that one will certainly be playing here during Conference time?

that the "Delaware Belle" is one of the newest and most streamlined boats equipped for cool, moonlit excursions down the river?

that the Academy of Music (just one square from the Bellevue-Stratford) is noted for its almost perfect acoustics?

what a "mug-up" is? You can attend one at the Conference in June in Philadelphia.

that Fairmount Park is the second largest natural park within city limits anywhere in the world?

that the world-famous "Buck's County Playhouse" can be reached by direct transportation from Philadelphia?

that Philadelphia can be reached by five major railroads, eight airlines, twenty-two bus lines, two superhighways, two "suspension" and two "lift" bridges, as well as by ferry, elevated, subway, trolley and rowboat?

that you will be handsomely welcomed, entertained, and educated at the 1952 APTA Conference in Philadelphia in June, 1952?

INDEX TO CURRENT LITERATURE

(Continued from page 189)

Spasticity, Pseudospontaneous Spasms, and Other Reflex Activities Late After Injury to the Spinal Cord. Lewis J. Pollock, M.D., Benjamin Boshes, M.D., Isidore Finkelman, M.D., Herman Chor, M.D., and Meyer Brown, M.D. Archives of Neurology and Psychiatry, November 1951.

Pediatrics

Mental Evaluation of the Aphasic Child. M. J. Berko. American Journal of Occupational Therapy, Nov.-Dec. 1951.

Prescriptions Set to Music—Musical Instruments in Orthopedic Therapy. E. G. Gilliland. Exceptional Children, December 1951.

Posture

Postural Abnormalities of the Spine and Lower Extremities in Young Children. M. B. Howorth, M.D. New York State Journal of Medicine, December 15, 1951.

Rehabilitation

Rehabilitation: A Challenge to the Voluntary General Hospital. Hospital Progress, December 1951.

this sword challenges CANCER

Under the sign of the cancer sword the American Cancer Society seeks to save lives by spreading vital facts to you, your neighbors, and your physicians . . . by supporting research . . . by providing improved services for cancer patients.

Only under the sign of this sword is there a three-fold, national attack on cancer. Cancer Strikes One in Five. Your Dollars Will Strike Back.

AMERICAN CANCER SOCIETY

Conference 1952

Ye Bellevue-Stratford
Philadelphia, Pennsylvania
June 23—28, 1952

Facts about the Conference

Rates (Daily)

COURT

Single room and bath, $5.50, $6.50.
Double room, double bed and bath, $8.00, $9.00, $10.00.
Double room, twin beds and bath, $10.00.

OUTSIDE

Single room and bath, $7.50, $9.00, $10.00, $11.00.
Double room, double bed and bath, $10.50.
Double room, twin beds and bath, $10.50, $12.00, $13.00, $14.00.
Combination of two rooms with one connecting bath, in court location: (One room with two twin studio beds; other room with one double bed). For two persons, $11.50; three persons, $14.50; four persons, $16.00.
Suite (parlor, double bedroom, twin beds and bath): $20.00, $25.00, $30.00.
Single room, running water, $4.50.
Double room, running water, $6.00.

Reservations

A blank appears in this issue (page 158) of the *Review*. All reservations for hotel space should be made with the hotel.

A roommate should be selected if possible. The number of singles in any hotel is limited.

Registration

Active and Inactive Members—$5.00
Student Members—$2.00
Physicians, occupational therapists, nurses and qualified physical therapists from other countries—no fee.
Professional membership card required.
Physical therapists licensed in the state of Pennsylvania, but not members of the Association—$15.00
Licensure card required.
Advance registration cards will be sent out with the dues notices. If registration is not done in advance your membership card will be required for registration.

Instructional Courses

On Friday and Saturday, June 27 and 28, four instructional courses will be offered to members only (See program schedule). Tuition, if registered at the conference—$5.00.

Instructional Course alone—$10.00.

Advance registration blanks will be sent out with the dues notices.

Research Papers for Philadelphia Conference

The committee for the selection of research papers to be presented at the 1952 conference has adopted the suggestion to have physical therapy discussions for each of the papers read. The committee wishes to stress that research studies may utilize any sound method of investigation; that is, experimental, historical, educational, statistical, or a newly devised therapeutic tool. Let's get behind this section of the program and make it the biggest we've ever had. Each chapter should encourage those members who have something of general interest for the Philadelphia meetings to prepare and present papers.

Make it YOUR responsibility:

1. To get your abstract in to the American Physical Therapy Association, 1790 Broadway, New York 19, New York, by April 15.
2. To urge other physical therapists who have done some research to do the same.

SARA JANE HOUTZ
Chairman, Committee to Select Research Papers

Business Meetings and Program Schedule

June 18th, 19th and 20th
Executive Committee Meetings

June 21st

all day	School Section

June 22nd

2:00 p.m. to 5:00 p.m.	House of Delegates

June 23rd

all day	House of Delegates
4:00 p.m. to 6:00 p.m.	"Mug-up"—Pennsylvania Chapter, Inc., Hostess
8:00 p.m.	**Opening Session—Physical Therapy Education: It's Relation to a Changing Emphasis in Medical Care** Mr. Basil O'Connor, Moderator. Panel participants to be announced.

June 24th

9:30 a.m. to 12:00 noon	**Symposium—Hand Injuries** Lt. Col. Richard H. B. Dear, Chief, Physical Medicine, Valley Forge Army Hospital, and staff members.
2:00 p.m. to 5:00 p.m.	**Symposium on Industrial Accident Disabilities** Moderator, William A. Tomasco, M.D. Participants to be announced.
2:00 p.m. to 5:00 p.m.	**Child Growth and Development Seminar** Jessie Wright, M.D. Other participants to be announced.
7:30 p.m.	Movies

June 25th

9:30 a.m. to 12:00 noon	**Symposium on Neurological Conditions** Moderator, Joseph C. Yaskin, M.D. Participants to be announced.
9:30 a.m. to 12:00 noon	**Electrotherapy—Panel Discussion** George Morris Piersol, M.D. Other participants to be announced.
3:00 p.m. to 5:00 p.m.	Standing Committee Meetings Chapter Chairmen and National Chairmen.
7:30 p.m.	Annual Banquet

June 26th

9:30 a.m. to 12:00 noon	**Reflex Patterns of Movement** Moderator, Julius H. Comroe, Jr., M.D. Participants, Frances Hellebrandt, M.D., Herman Kabat, M.D.
2:00 p.m. to 4:30 p.m.	Research Papers Moderator, Frances Hellebrandt, M.D.
2:00 p.m. to 4:30 p.m.	Movies

June 27th and 28th
all day Friday and Saturday morning

Instructional Courses

Electrical Investigation
Mary Elizabeth Kolb, Chief Instructor

Reflex Patterns of Movement
Margaret Knott, Chief Instructor

Analysis of Gaits
Signe Brunnstrom, Chief Instructor

Functional Anatomy
To be announced.

A recess will be scheduled each morning and afternoon to visit exhibits.

Conference News

Technical Exhibitors

Among the technical exhibitors at the Annual Conference will be:

Birtcher Corporation
Burdick Corporation
Cosmevo Manufacturing Company
Elgin Exercise Appliance Company
Hanovia Chemical Company
Ille Electric Corporation
Liebel-Flarsheim
J. P. Lippincott Company
Medco Products Company
J. A. Preston
Raytheon Manufacturing Company
Ries Corporation
Saniglastic Corporation
W. B. Saunders and Company
Spencer Incorporated
Teca Corporation
Webster Therapeutic Equipment

Exhibits

This year exhibits are under the management of Gordon M. Marshall of Chicago, advertising agent for the *Review*. They will include, as in former years, technical, chapter and educational exhibits. A large number are anticipated which will be of great interest, and will merit spending considerable time in the exhibit area.

Motion Pictures

Time has been set aside for showing motion pictures and slides which would be of interest to physical therapists. Any members or organizations who have movies, slides, or film strips to show at the Annual Conference may apply for inclusion in the program to the American Physical Therapy Association, 1790 Broadway, New York 19, New York. All applications must be filed by April 1, 1952.

All applications should contain the following information:

1. Title and brief description of the subject matter covered
2. Length of film and time needed to show it
3. Size of film—8, 16, or 32 mm; silent or sound; black and white or colored
4. Number of slides and time needed to show them
5. Size of slides—2 x 2, or 3 x 4; kodachrome or black and white
6. Name of organization and individual responsible for material

The Program Committee will select those films and slides which in their judgment will be of greatest interest to the audience and which will fit into the time allotted. Only films and slides thus selected will be shown.

WILLIAM A. TOMASCO, M.D.

Conference Program Speakers

William A. Tomasco, M.D., Medical Director of the Pennsylvania Manufacturers Association Casualty Insurance Company, will be the moderator on the Symposium of Industrial Accidents on Tuesday afternoon, June 24. Dr. Tomasco received his medical degree in 1936 from Hahnemann Medical College, Philadelphia. He is Associate Surgeon and Chief of the Industrial Clinic, Doctors' Hospital, and a Fellow of the Industrial Medical Association.

George Morris Piersol, M.D., Professor of Physical Medicine, University of Pennsylvania, and Professor of Medicine of the Graduate School of Medicine, will head a panel discussion on Electrotherapy on Wednesday morning, June 25. Dr. Piersol is well known to all physical therapists. He is Medical Director, Division of Physical Therapy Medical Auxiliary Services School, and is an Associate member of the American Physical Therapy Association, serving on its Advisory Council 1946 to 1948.

The Philadelphia Gazette Vol. 4

Amiable Reader: With this Issue of our Humble Gazette we are pleased to bring to you a Preview of some Pleasant and Edifying Events which will come to pass in our Fair City of Philadelphia in June, Anno Domini, 1952. At that time there will come to Visit and to Convene a great Host of Persons from the many places round about. It is our Hope that what is Planned will be found Pleasing and Entertaining to all assembled.

Upon the very Day when Many shall arrive will take place a Genial and Cheerful Event conceived for the Purpose of Good Fellowship and Friendship. This Good Gathering, called by the Quaint and Descriptive name of "Mug-Up," is to acquaint our Guests with our Particular form of Philadelphia Hospitality and to Please them in so much as they will find here an Opportunity to Greet their many Friends who also shall be Present. Poor Richard has advised us that this will most certainly be the Finest Social Affair of this or other Seasons and that much fine Entertainment, Refreshments, and Pleasant Conviviality shall be Provided for All. This Humble Writer does most earnestly hope that each of his Readers will be present so that Greetings may be shared and Pleasant conversation come about.

Still many other forms of Entertainment will be Shared by all who are with us at this Time. Justly proud are all the Citizens who now shall be your Hosts and Hostesses, for here in Philadelphia can be seen a Great Variety of Arts and Devious Forms of Entertainment. To those who do Enjoy the Theater we can Offer many Pleasant Hours. Here, too, our Visitors can find a most Agreeable choice of Musical organizations if that is to their Liking. Others who are best Entertained at Sports and Games will be most Happily Content at the Prospect of being present to cheer at Games of Ball and so be Pleasured to their Taste. Are you he to whom a Pleasant Vista brings Enjoyment? That, also, can be yours during your Stay for Many Parks and Sites of Beauty are Available by Vehicle both Near and Far and Numerous are the Boats which Sail the mighty Delaware.

Thus will this Greene Countrie Towne, the City of Brotherly Love, do all that can be done to make your Stay of Delight and serve to Establish for you many Memories of an Agreeable and Enjoyable Visit.

VALLEY GREEN INN

The lone representative of the lost hostelries of the Wissahickon Valley, dating back to Revolutionary days.

The Long Way Home

Philadelphia, rich in history, is also surrounded on every side by country both beautiful and interesting. We hope the following will assist you in planning a pre- or postconference tour to suit your tastes, and give you some information on short trips while you are with us.

Pre- and postconference tours:

Are you interested in tours of Old Virginia? American Express Travel Service offers a seven-day all expense tour which includes famous places as Williamsburg, Richmond, Skyline Drive, and a visit to Washington, from Philadelphia—$161.75.

Or colonial New England? American Express Travel Service again offers a seven-day all expense tour, from New York—$139.50. You would see such places as quaint Cape Cod, Historic Boston, Gloucester and Ausable Chasm.

Additional details of these and other tours may be secured from the "Ask Mr. Foster Travel Service, Inc." in your local area.

During Conference:

In your free moments sight-see around about Philadelphia.

1. Historic Valley Forge—4 hours—$4.00
2. Historic Philadelphia—2 hours—$2.00
3. Evening Tour to Bucks County, famous Bucks County Play House, quaint gift shops and artist colony—5 hours—$5.00

Arrangements can be made at the Bellevue-Stratford, through the Gray Lines.

Membership News

Marriages

Jean Alice Watson of Greensboro, N. C., now Mrs. Jean Alice W. Coble, Greer, S. C.
Beverly Jane Wight of Seattle, Wash., now Mrs. Beverly Jane W. Gebhardt, Seattle, Wash.
Nancy J. Killam of Hawley, Pa., now Mrs. Nancy K. Gumble, Pike Co., Pa.
Mary Sue Hutchins of Peoria, Ill., now Mrs. Mary Sue H. Kubitz, Wilmington, Del.
Annette Mark of Brooklyn, N. Y., now Mrs. Annette M. Logiodice, Hamden, Conn.
Margot Schaeffer of Rocky Hill, Conn., now Mrs. Margot S. Montague, Rocky Hill, Conn.
Margaret M. Crane of Dallas, Texas, now Mrs. Margaret C. Strauss, Dallas, Texas
Captain Myrtle Bates of El Paso, Texas, now Mrs. Myrtle B. Ward, Fort Bliss, Texas
Mrs. Marjorie T. Morden of Oakland, Calif., now Mrs. Marjorie T. Whittier, Alameda, Calif.

School News

Mrs. Alice Lou Plastridge Converse has accepted an appointment to teach a course in Therapeutic Exercise during the second semester at the Boston University, Sargent College of Physical Education. Mrs. Converse brings to the college a background rich in knowledge acquired during her many years of experience at the Georgia Warm Springs Foundation.

Clinical Training Supervisors for the Physical Therapy Department of the University of Southern California met in Los Angeles on January 31, 1952, in a full day session. Twenty-five people attended, representing eleven institutions where physical therapy students of the University affiliate. All were from the Los Angeles area except Mrs. Frances Ekstam of Riley Hospital, who came from Indianapolis, Indiana to attend the session.

Led by Dr. C. L. Lowman, Medical Director, and Miss Charlotte Anderson, Chairman of the Physical Therapy Department of the University, a well outlined agenda was covered. Supervisors and instructors had the opportunity to discuss the structure of their programs, grading and evaluation methods, and curriculum content as exemplified by student-performance in the clinical situation. Interest was focussed on a comparison of clinical ratings based on the standard forms used by the University of Southern California, and those used in the Student Selection Research Program of the American Physical Therapy Association.

Mary E. Folger of Boston, Massachusetts, passed away early in February. Miss Folger became a member of the American Physical Therapy Association in 1922, and had worked at the Boston City Hospital for many years.

Physical Therapy Supervisors of 1951 Graduates — Please Note

In 1950 the American Physical Therapy Association with the cooperation of all schools of physical therapy began a three-year Student Selection Research Program. This program was described in the February 1951 issue of the *Physical Therapy Review* by Mr. Wallace Gobetz of the New York University Testing and Advisement Center.

Last year almost 600 student physical therapists participated in the study. They completed a battery of carefully selected and constructed tests and were graded on their performances in Clinical Practice. Their classroom grades and grades on their examination by the American Registry of Physical Therapists were all submitted for evaluation. This year a similar number is participating.

This spring the Testing and Advisement Center hopes to obtain an "on the job" evaluation of all 1951 graduates who participated in the Student Selection Research program. By comparing the grades and performance of the students in school with how successful they are in an actual job situation, it is hoped that a good screening device can be formulated. This will help physical therapy schools select only those students who can be predicted to be successful following graduation. Similar programs in medicine, dentistry, and law have aided these professions considerably.

If you are supervising one or more of these recent graduates you may expect to receive a special rating sheet in connection with this project. Your participation will take only a few moments of your time but will be greatly appreciated. Your participation is *essential* to the success of the total project.

Be on the lookout for an envelope of material from the New York University Testing and Advisement Center which should arrive in March. Please fill it in and post promptly.

Earl J. Hudson, vice-president of United Cerebral Palsy, and president of United Detroit Theatres, presents a check for $12,000 to Miss Gertrude Beard, Technical Director, Course in Physical Therapy at Northwestern University School of Medicine, to continue the Physical Therapy School for one year and help relieve the acute shortage of physical therapists.

Northwestern Physical Therapy School

On October 1, 1951, it was announced that the Physical Therapy School at Northwestern University would close at the end of the present school year. This was tragic news to all Northwestern alumnae and to the American Physical Therapy Association. In this time of critical personnel shortage every school is needed. The reason for closing the school was lack of funds. For the past several years Northwestern had received grants from the National Foundation for Infantile Paralysis, and the present one was terminal.

The Illinois Chapter at its November meeting discussed the closing of the school and what it meant to the profession and to the community. A committee was appointed to study the situation and to plan action. The members of this committee were Joyce Cairns, chairman, Louise Bailey, Viola Bryson, Mary Peabody, and Louise Reinecke. It was ascertained that Northwestern was anxious to continue the school provided funds could be found. Accordingly, the Illinois Chapter decided to initiate fund raising to continue the Physical Therapy School.

The goal was $35,000 by July 1952 to assure the continuation of the school for a three-year period. One-third of this amount had to be available by February 1, 1952. Dean Young of the Medical School assured the committee that after the three-year period, Northwestern University would be able to carry on the school.

Within two months the committee had achieved its objective. On February 17 at the Semiannual Convention of the United Cerebral Palsy Association, Inc., Mr. Earl J. Hudson, Vice-president, presented a check for $12,000 to Miss Gertrude Beard, Technical Director of the Course in Physical Therapy. This check does not represent all of the monies raised, but it is the third needed by February 1. The committee has had expert secretarial help from Mrs. Helen Eckersley. This was

made possible through financial support from the Northwestern University Physical Therapy Alumnae Association (John S. Coulter Memorial Fund).

The Illinois Chapter has performed an outstanding service to the profession and to the community by keeping the doors of the Northwestern University Physical Therapy School open. It was a project that required quick action, but with proper planning; it required courage; it required support of the members and the advisory committee. All this and more the Illinois Chapter had. The President, Jean Roland, and the Special Committee are to be heartily congratulated on a job well done.

Recruitment Notes

Carmen Stoltz was a guest on the "Welcome Traveler" radio program on her way back to Alaska. It was a nation-wide hook-up and a fine opportunity to tell a large audience about physical therapy.

The U.S. Army and U.S. Air Force Recruiting Service distributed to all television stations in the country on July 1951, four one-minute films for public service use in behalf of recruitment. Included was one on physical therapy. A new series is being planned.

The procurement officers of the Women's Medical Specialist Corps visited in the last three months of 1951, seventy-seven colleges, universities, high schools, hospitals, and fifteen organizations and meetings.

Chapters and members are responding wholeheartedly to the urgent call for an intensified recruitment campaign for more physical therapists. The ideas, interest and just plain work that is going into this reflects the physical therapists' pride in the profession.

Workshop in Psychosomatic Aspects of Physical Therapy

The Physical Therapy Division of Duke University School of Medicine and Hospital will offer a five-and-a-half day workshop, from June 9 to 14, in the Psychosomatic Aspects of Physical Therapy.

The concept of illness as failure of adaptation to stress will be studied. Discovering the individual patient's stress situations and patterns of adaptation, and handling these factors as a part of comprehensive physical therapy will be explored with members of the Department of Psychiatry through discussion and work with psychosomatic and psychoneurotic patients.

Registration is limited to six. Tuition is $10.00. Room and meals for the period of the workshop may be arranged at dormitory rates on the Duke University campus. For further information and application blanks write to the Director of Physical Therapy, Duke Hospital, Durham, North Carolina.

New Student Members

Columbia University

Robert Sprague — Nancy J. Tutt
Daniel Struldwitz — Esther Wood
Charles H. Welge, Jr.

Mayo Clinic

Helen E. Field — Ellen F. Gray
Edwina Frick — Marion H. Kaneko
Dale V. Shaffer

St. Louis University School of Nursing

H. Ann Walker

Simmons College

Cynthia Carpenter — Genevieve Mann
Catherine Constas — Marilyn Murphy
Marilyn Fairman — Marion Slattery
Marion Flaxman — Elizabeth Thompson
Lucy J. Hopkins — Evelyn Washburn
Lillian Wolcott

Stanford University

Barbara Becker — Margaret McFarlane
Charlotte Craig — Harriette Nelson
Norman Greene — Edward Rathjen
Maurice Hahn — Carol Richardson
Gordon Herwig — Roy Saunders
Warren Hofmann — Ralph Scott
Dorothy Lueke — Kenneth Shelton

University of Texas School of Medicine

Joseph L. Burger — Beverly Graff
Katy M. Defferari — Lucille V. Jones

Washington University School of Medicine

Helen L. Ferguson — Howard Lieberman
Marilyn J. Gibbin — Mary M. Ryan
Wilbur R. Gregory — Betty R. Simmons
Wilfred L. Harrison — Marilyn J. Smith
Robert J. Hickok — John T. Wilson, Jr.
Arnold F. Winsett

Medical Field Service School
Brooke Army Medical Center

Lt. Rosemary Barber — Lt. Virginia E. List
Lt. Mary C. Bernardi — Lt. Betty L. McGowan
Lt. Barbara Bugbee — Lt. Virginia L. Pace
Lt. Betty June Cobb — Lt. Virginia O. Rau
Lt. Helen E. Cruickshank — Lt. Betty J. Reimer
Lt. Rita L. Custeau — Lt. Doris E. Shinn
Lt. Madelyn Esposito — Lt. Marion A. Smith
Lt. Suzanne G. Gunsalus — Lt. Jane Van Scoy
Lt. Gudrun Hofstad — Lt. Joan Van Scoy
Lt. Dotty F. Howell — Lt. Roberta L. Wallace
Lt. Mary M. Jackson — Lt. Sarah J. Watson
Lt. Shirley M. Krizmanich — Lt. Shirley L. Wilson

Barbara White Accepts New Position

Miss Barbara White has resigned as chief physical therapist at the New York University-Bellevue Institute of Physical Medicine and Rehabilitation to accept a position with the Division of Crippled Children in Connecticut.

General News

Study Opportunities Available in Air Force WMSC

The Medical Service of the United States Air Force throughout 1952 will continue offering qualified young women the opportunity to complete a Physical Therapy Training Course, Occupational Therapy Clinical Affiliation, or Dietetic Internship as officers in the USAF. Affirmation of these training possibilities was made today by Col. Miriam E. Perry, Chief of the Air Force WMSC.

The Dietetic Internship and Physical Therapy Training Course will be conducted in civilian institutions. Applicants may be appointed as second lieutenants in the Women's Medical Specialist Corps prior to start of such training or at any time during the period of training. For those applicants appointed prior to the start of training, the date of appointment is the day they begin their training as determined by the individual school or hospital.

Further information regarding these programs may be obtained by writing the Office of The Surgeon General, Headquarters United States Air Force, Attention: CSG-23.

Pamphlet on Chronic Illness

A program for dealing with America's No. 1 health problem—chronic disease—is outlined in *Something Can Be Done About Chronic Illness*, a popular 25-cent pamphlet published jointly today by the National Commission on Chronic Illness and the Public Affairs Committee, 22 East 38th Street, New York.

Introducing the pamphlet, Dr. Leonard W. Mayo, chairman of the Commission on Chronic Illness, declares that "the problem can be solved only with the full cooperation of the medical profession and the public health and welfare officials working together. . . . Its solution is dependent not only on the professions, but on the community leadership that in this country is responsible for producing such medical care facilities as hospitals, diagnostic centers, and homecare programs."

Although the amount of chronic illness has increased in recent years as the proportion of older folks in the population has increased, the over-all picture is described as an encouraging one.

"Within the last generation," the pamphlet points out, "medical science has advanced further against chronic disease than ever before. It has given us insulin for diabetes, sodium dilantin for epilepsy, cortisone and ACTH for rheumatoid arthritis . . . and has developed safer and surer diagnostic methods."

Unfortunately, the advances that have been made in preventing, ameliorating, or postponing the effects of chronic disease have, the pamphlet admits, far outstripped any progress in preventing these diseases from developing.

What is primarily needed in this area, according to the pamphlet, are means for detecting the disease early—"of bringing the disease to the doctor before it brings you."

This would be no problem, it adds, "if everyone in the United States could or would go to his physician for a complete health inventory once or twice a year."

But as pointed out at the National Conference on Chronic Disease last winter "the tremendous demands on the doctor's time and the great expense of detection procedures on an individual basis require the development of new techniques such as mass screening." Yet "we need to learn more about multiple screening tests, through research and experimentation, before they can be accepted and widely used."

Publication on Care of the Disabled

"The Disabled in the Modern World" is the title given to the proceedings at the Fifth World Congress of the International Society for the Welfare of Cripples held in Stockholm, September 1951. Copies may be obtained from the Society's office, 127 East 52nd Street, New York 22, New York, for $3.50 cloth bound, and $3.00 paper bound.

It is highly recommended for schools of physical therapy for source material on the care of the disabled throughout the world.

Schools of Physical Therapy

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS
OF THE AMERICAN MEDICAL ASSOCIATION

Graduates of these schools are eligible for membership in the American Physical Therapy Association.

Name and Location of School	Medical Director and Technical Director	Entrance Requirements	Length of Course	Classes Start	Certificate, Degree, or Diploma
CALIFORNIA					
[1]**Childrens Hospital Society,** Los Angeles (in affiliation with University of California, Los Angeles)	Samuel S. Mathews, M.D. Mary J. Dodge	a[3]-b[3]-d-e g[4]	14 mo 4 yrs	Sept	Certificate Degree
[1]**College of Medical Evangelists,** Loma Linda	F. B. Moor, M.D. R. Wm. Berdan	a-b-c-d-e g	15 mo 4 yrs	Sept	Certificate Degree
[1]**Univ. of So. California,** Los Angeles	Charles L. Lowman, M.D. Charlotte W. Anderson	a-b-d-e g[4]	14 mo 4 yrs	Sept Sept-Feb	Certificate Degree & Cert.
[1]**Univ. of California Medical School,** San Francisco	Lucile M. Eising, M.D. Margery Wagner	d-e g	12 mo 4 yrs	Sept-Feb	Certificate Degree
[1]**Stanford Univ.,** Palo Alto	Wm. Northway, M.D. Lucille Daniels	a-d-e-f g[4]	12 mo 4 yrs	Jan-June or Sept	Certificate Degree
COLORADO					
[1]**Univ. of Colorado Medical Center,** Denver	Harold Dinken, M.D. Dorothy Hoag	a[3]-b-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
ILLINOIS					
Northwestern Univ. Medical School, Chicago	Emil D. W. Hauser, M.D. Gertrude Beard	a-b[3]-d-e	12 mo	Oct	Certificate
IOWA					
[1]**Univ. of Iowa,** Iowa City	W. D. Paul, M.D. Olive C. Farr	b-e	12 mo	Sept	Certificate
KANSAS					
[1]**Univ. of Kansas School of Medicine,** Kansas City	Donald L. Rose, M.D. Ruth Monteith	a-b-d-e g[4]	12 mo 4 yrs	Feb-Sept	Certificate Degree
MASSACHUSETTS					
Bouve-Boston School, in affiliation with Tufts College, Medford 55	Howard Moore, M.D. Constance K. Greene	g[4]	4 yrs	Sept	Degree
Simmons College, Boston	{Wm. T. Green, M.D. {Arthur L. Watkins, M.D. Shirley Cogland	a[3]-b-d-e g[4]	16 mo 4½ yrs	Sept	Diploma Degree
Boston Univ., Sargent College of Physical Education, Cambridge	Kenneth Christophe, M.D. Adelaide McGarrett	a-b-d-e f-g[4]	12 mo 2 or 4 yrs	Sept	Certificate Degree
MINNESOTA					
[1]**Univ. of Minnesota,** Minneapolis	Frederic J. Kottke, M.D. Ruby Green Overmann	d-f-g[4]	2 yrs	Sept	Degree
[1]**Mayo Clinic,** Rochester	Earl C. Elkins, M.D. Darrell Hunt	a-b-c-d-e	2 yrs	Sept	Certificate
MISSOURI					
[1]**Washington Univ. School of Medicine,** St. Louis	Sedgwick Mead, M.D. Beatrice F. Schulz	f-g[4]	2 or 4 yrs	Sept	Degree
[1]**St. Louis Univ. School of Nursing,** St. Louis	A. J. Kotkis, M.D. Sr. Mary Imelda	f-g[4]	2 or 4 yrs	Jan-Sept	Degree

Name and Location of School	Medical Director and Technical Director	Entrance Requirements	Length of Course	Classes Start	Certificate, Degree, or Diploma
NEW YORK					
Albany Hospital, Albany (in affiliation with Russell Sage College, Troy)	John W. Ghormley, M.D. Catherine Graham	a-b-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
[1]**Columbia Univ.,** New York	Wm. B. Snow, M.D.	a-b[3]-e f	12 mo 2 yrs	Sept	Certificate Degree
[1]**New York Univ., School of Education,** New York	George G. Deaver, M.D. Elizabeth C. Addoms	a[3]-b[3]-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
NORTH CAROLINA					
[1]**Duke Univ., School of Medicine,** Durham	Lenox Baker, M.D. Helen Kaiser	a[3]-b[3]-d-e	15 mo	Oct	Certificate
OHIO					
[1]**Cleveland Clinic,** Cleveland	Walter J. Zeiter, M.D. Mildred Heap	a-b-d-e	12 mo	Oct	Certificate
PENNSYLVANIA					
[1]**D. T. Watson School of Physiatrics,** Leetsdale	Jessie Wright, M.D. Kathryn Kelley	a[3]-b[3]-d-e	12 mo	Oct	Diploma
[1]**Univ. of Pa. School of Auxiliary Med. Serv.,** Division of Physical Therapy, Philadelphia	George M. Piersol, M.D. Dorothy Baethke	e g[4]	12 mo 4 yrs	Sept-Feb Sept	Certificate Cert. & Degree
TEXAS					
[1]**Hermann Hospital,** Houston	Oscar O. Selke, Jr., M.D.	a-b-d-e	12 mo	Oct	Certificate
[1]**Univ. of Texas School of Medicine,** Galveston	G. W. N. Eggers, M.D. Ruby Decker	a-b-e d	12 mo	Jan	Certificate Degree
VIRGINIA					
[1]**Med. College of Va.,** Baruch Center of Phys. Med., Richmond (in affiliation with Richmond Prof. Inst.)	Walter J. Lee, M.D. Susanne Hirt	a-b-d-e g[4]	12 mo 4 yrs	Sept	Diploma Degree
WISCONSIN					
[1]**Univ. of Wisconsin Med. School,** Madison	Harry D. Bouman, M.D. Margaret Kohli	a-b-c-e-f g[4]	12 mo 4 yrs	Sept Sept-Feb	Certificate Cert. & Degree
U. S. ARMY MEDICAL SERVICE					
(a) **Medical Field Service School,** Brooke Army Medical Center, San Antonio, Texas, and	Charles D. Shields, Lt. Col., M.C. Agnes P. Snyder, Major, WMSC	e	12[2]	Mar-Sept	Certificate
(b) **Fitzsimons Army Hospital,** Denver, Colorado	H. B. Luscombe, Col., M.C. Harriet S. Lee, Major, WMSC	Completion of Medical Field Service School			
(c) **Walter Reed Army Hospital,** Washington, D. C.	John H. Kuitert, Lt. Col., M.C. Brunetta Kuehlthau, Major, WMSC	Completion of Medical Field Service School			
(d) **Letterman Army Hospital,** San Francisco	Raoul C. Psaki, Lt. Col., M.C. Emma T. Harr, Major, WMSC	Completion of Medical Field Service School			

Entrance Requirements

FOR ONE-YEAR COURSE

a = Graduation from accredited school of nursing.
b = Baccalaureate degree with major in physical education.
c = Two years of college with science courses.
d = Three years of college with science courses.
e = Baccalaureate degree with required science courses.

FOR TWO-YEAR COURSE

f = Two years of college with science courses.

FOR FOUR-YEAR COURSE

g = High school graduation.

Footnotes

[1]Male students admitted.

[2]12 months' course includes training at the Medical Field Service School and Fitzsimons, Walter Reed, or Letterman Army Hospitals. Apply directly to the Surgeon General, Department of the Army, Washington 25, D. C.

[3]Additional college science credits required.

[4]Advanced standing students accepted.

Please address initial correspondence to the School of Physical Therapy in the institutions listed. Tuition and fees will vary from school to school.

Abstracts

A Physical Therapist Gives Some Tips to Parents of Cerebral Palsied Children

Joan C. Kuhnen, New York, N. Y. In THE CRIPPLED CHILD, 29:3:6, October 1951.

Since it is not possible for all children to be treated daily in a treatment center the physician and physical therapist in many instances rely on the parent to carry out the program at home. The physical therapist teaches the parent the exercises which have been prescribed for the child by the physician responsible for the total medical care.

Following are a few suggestions which have helped parents to work cooperatively with physical therapists:

(1) A physical therapist working with a cerebral palsied child has a thorough knowledge of bones, joints, muscles and nerves of the body and how they work together to produce movement. It is unusual for a parent to be familiar with muscle function and joint movement, but the physical therapist, in teaching different exercises, can interpret muscle function and joint movement so that the parent will better understand why it is necessary to carry out exercises for a particular part of the body.

(2) After a parent has been shown the exercises, it should be routine procedure to demonstrate proficiency to the physical therapist.

(3) It is sometimes helpful for a parent to write down the exercises in her own words, so that the more technical terms can be more easily understood.

(4) A parent should try to keep all the exercises together in one book instead of on small slips of paper which can be misplaced.

(5) Parents may find that the physical therapist, over a period of time, gives more exercises and functional activities than they are able to do in one treatment period at home. These should be checked over with the physical therapist to determine which, if any, can be eliminated.

(6) It is important for the parent as well as for the child to keep the physical therapy routine interesting.

(7) A home progress chart helps parents as well as the child to keep up interest in the physical therapy routine.

(8) It is important that parents, in the role of physical therapists, keep their own backs strong. There are many ways they can lift and handle their child without causing unnecessary back strain.

(9) To speed the child's progress, special equipment is used at the treatment center. Whenever possible this equipment should be duplicated in the home.

(10) The child's braces and shoes must be kept in good repair at all times.

Some Clinical Applications of Ergography

F. A. Hellebrandt, M.D., and Sara Jane Houtz, M.S., Richmond, Va. In THE JOURNAL OF BONE AND JOINT SURGERY, 33-A:4:968, October 1951.

No branch of medical practice is called upon more frequently than orthopedics for the purpose of evaluating the magnitude and the functional significance of disabilities affecting the neuromuscular and skeletal systems. The merits of objectivity in disability evaluation are self-evident, especially when the evaluation is to be used in the adjudication of compensation claims due to industrial injuries or to injuries sustained during service in the armed forces. Such disability evaluation usually is based, as it should be, upon the judgment of the examining physician. Although no instrument can replace the knowledge, skill, and insight of the experienced observer, many of the basic components of physical demands and capacities analysis are amenable to direct measurement. When these are appraised quantitatively, the objective evidence obtained serves as a valid and reliable guide to the examiner and lessens the burden of proof in much the same way that an electrocardiogram may be used to sustain the view of an internist.

The period since the onset of World War II has witnessed the evolution of what Rusk has aptly called the third phase of medical practice, dynamic convalescent care which bridges the gap between the end of definitive treatment and the restoration of maximal residual function. His concept has focused increasing attention on the social and economic advantages of utilizing remaining abilities for industrial purposes by the selective placement of impaired workers. Before this can be done, facilities for and technics of treatment must be available for the full physical restoration of the disabled. This is the most important step in rehabilitation. Functional capacities must then be assessed in order to match the patient's abilities with the demands of job assignment.

The merits of ergography in relation to the evaluation of disability, the quantification of exercise dosage, and the objective measurement of progress should be considered. Ergography may be useful as a guide to the medical examiner in the evaluation of the functional status of the orthopedically disabled at the onset of treatment, the critical appraisal of end results, the determination of the end point of effective rehabilitation, and the magnitude of residual dysfunction. Although adequate management of the patient usually requires no specialized technics to evaluate functional status, high degrees of precision in measurement are sometimes desired. Objective testing then has special merit; it enables the examiner to support his deductions with demonstrable evidence.

Physical Treatment and Rehabilitation of the Hemiplegic Patient in General Practice

Odon F. von Werssowetz, M.D., Nashville, Tenn. In AMERICAN PRACTITIONER, 2:11:963, November 1951.

In an average case of hemiplegia, because of the long duration of treatment, it is not practical to have the patient hospitalized or brought to a clinic several times a day for treatment by skilled physical therapists. Neither is it practicable to have a physical therapist visit the patient in his home as often as treatment is indicated. Obviously, the physician himself cannot undertake the actual administration of a retraining program but should delegate it to a member of the family who can conduct the activities under his supervision. With a program of this kind, many of the complications usually associated with hemiplegia can be avoided.

If the treatment is started early, limitation of motion can be prevented in the affected extremities. If, however, the patient is not treated early, contractures usually occur first in the shoulder and foot and later in all joints. The overall aims of physical treatment and rehabilitation in general are: (1) To prevent and correct deformities. (2) To improve

muscle function. (3) To increase functional capacity by: (a) retraining the patient in ambulation; (b) reestablishing the function in the affected upper extremity as far as possible, and teaching the patient to perform activities essential to daily living with the unaffected upper limb; and (c) training in speech, if such disability is present.

In recent cases of hemiplegia, maintenance of the proper bed position is all that may be required to prevent deformities. There may be no need for any special procedures to protect the affected limbs, though a support for the bed clothes—to keep them off the foot—is advisable.

Gentle passive movements, through the full range of each joint, should be administered at least twice daily, for adhesions begin to form very early in the first week. When formed, they are difficult to remove.

Gentle movements may be administered through the use of pulleys. Pulley therapy, when administered by the patient, has the advantage over the usual stretching exercises that are done passively, for the patient, knowing his own pain threshold, will proceed to full tolerated motion much more quickly. Pulley therapy also can be used to aid in the reestablishment of reciprocal motion patterns.

Quadriceps setting exercises should be started early, as this muscle is one of the first to show atrophy and is one of the important muscles in ambulation.

An excellent exercise for the patient with a paralyzed and stiffening arm is to interlace the fingers of both hands and to imitate the movement of rowing. Thus the contracted fingers are straightened, the wrist and triceps extended, and the biceps relaxed in one procedure. Passive movements of the arm in abduction external rotation and in the overhead position should be performed several times a day to prevent a frozen shoulder.

The hemiplegic patient, because of his cerebral lesion, generally, has literally forgotten how to execute voluntary movements. The method of teaching is to detect the slightest return of power during passive movement and to call the patient's attention to it. Then the patient is encouraged to voluntarily contract this muscle while assistance is given by an attendant, who completes the movement passively. At each attempt the attendant does less and the patient does more, thus reestablishing a movement pattern.

Most hemiplegic patients should be started on early ambulation; that is, two to three weeks after the acute phase. Early ambulation seems to stimulate the reflex pattern of walking through the sensory contact of the foot on the floor.

The method of beginning reeducation of the upper extremities depends on the individual case. The method is the same as in the lower extremity, but, because the function usually is more severely dissociated, an attempt is made to show the patient that the hand and fingers are his own. This is done by the use of maneuvers which make it appear that he is moving the hand and fingers. With the patient lying on his back, the arm is flexed at the elbow, and the forearm is in a perpendicular position. This will cause the wrist to be flexed and the fingers to dangle. The forearm then may be supported by a pillow or towel, or the physician actually may assist by making gentle pressure to keep the forearm upright. Then the patient is instructed to watch carefully. By skillfully balancing the forearm, topped by the counterbalancing hand and fingers, a position will be found where the limb will come to rest balanced over the broad base at the elbow. This should be pointed out to the patient, who should be impressed with this successful achievement. The next step is to fully flex and fully extend the hand at the wrist. These movements will passively extend and flex the fingers at the metacarpophalangeal and interphalangeal joints. Again the demonstration of motion is called to the attention of the patient and it is impressed upon him that he is actually moving his fingers.

Osteoarthritis of the Hip: Its Surgical Treatment

Walter Mercer, M.B., Ch.B., F.R.C.S., Edinburgh. In EDINBURGH MEDICAL JOURNAL, 58:11:521, November 1951.

Osteoarthritis is nowadays one of the commonest and, at the same time, most neglected of our diseases. Its neglect is not justified, for there are few people suffering from this crippling and painful condition who cannot be relieved.

In treating a patient with osteoarthritis of the hip, it is necessary before planning any course of treatment to consider all available information, not only about the local condition and its effects, but about the general make-up of the patient. The patient himself will require even more attention than the joint. It is necessary to consider in detail his age, physical condition, and economic state; his employment and its nature, and the necessity or otherwise of continuing with it.

In the early stages much benefit can be derived from conservative measures. Bad posture from faulty weight-bearing is corrected, and appropriate foot and posture exercises are given in conjunction with treatment directed toward the hip itself. Working conditions are investigated and altered or modified where necessary. Where there is a flexion deformity a rest period every day in the prone position is insisted on, or even traction for a period to relieve the muscular spasm and diminish the pain. Obesity is common and is corrected by a low calorie diet.

For the local condition, short-wave therapy is useful in reinforcing the blood and lymph supply. It is given at maximum toleration daily. Massage also is wonderfully helpful. For the anterior part of the capsule to be reached the thigh is flexed, abducted and laterally rotated and deep friction applied transversely across the fibers of the capsule. The posterior part of the capsule is reached by deep pressure one and a half inches medial to the upper edge of the great trochanter. Exercises should be nonweight-bearing and designed to overcome the flexion deformity. The value of X-ray therapy in this deeply seated hip-joint is doubted.

In many of the reasonably early cases much benefit may be obtained, both in cases of pain and of limited movement, by manipulation under anesthesia. The method is easy and only the hip is put through a full—or as full as possible—range of movement of flexion and extension. Other movements are somewhat dangerous and are better avoided. The improvement obviously must be temporary and the treatment palliative, for, of course, the symptoms recur, but the improvement may last two to three years. A second similar maneuver is rarely so successful or its effect so lasting.

The success of arthroplasty depends among other things upon very cooperative patients and intense postoperative care. Some method of retaining internal rotation, either by rotational skin traction or a plaster boot with a crosspiece of wood, is continued for three weeks and the patient may get up in six to eight weeks. He uses crutches at first. Physical therapy is initiated in the

first week and is necessary as the hip-moving muscles often have been more or less out of action for a long time on account of pain and disuse, and must be carefully reeducated by graduated exercises. Movements are helped greatly while in bed if a roller skate is fixed to the foot on the affected side and allowed to glide on a broad smooth board laid on the bed.

Training Child Amputees in the Michigan Crippled Children Commission Program

Jessie Waddell, R.N. In THE CRIPPLED CHILD, 29:3:18, October 1951.

The Michigan Crippled Children Commission had long been aware of the fact that providing a prosthesis to a child was only a beginning. The orthopedic nursing staff found many an arm and leg discarded. The child had tried using his appliance only to find it cumbersome and frequently preferred to continue without it. A child amputee training program was developed within the commission to adapt the technics of rehabilitation for the service-connected amputee to children. The best in medical and surgical care was made available to each child amputee. The program is constantly being evaluated to give the child amputee the benefits of new developments in this field to best meet his psychological and functional needs.

At a convalescent center in Grand Rapids a professional team was organized consisting of physicians, prosthetic instructor, physical therapist, occupational therapist, nurse, and prosthetist. Training of the child amputee not only is initiated at the center, but is a continuing process with arrangements being made for periodic return to the center for recheck at frequent intervals, especially during the growth period. Home supervision of the child is provided by the commission orthopedic nursing staff and the local public health nurses.

The article includes a short report from the chief physical therapist, chief occupational therapist, and prosthetic training instructor. Each of these is a member of the specialized team which has participated in this program and which has assisted in rehabilitating the more than 150 child amputees who have been referred to the program to date.

Influence of Alternate and Reciprocal Exercise on Work Capacity

F. A. Hellebrandt, Sara Jane Houtz, and Robert N. Eubank, Richmond, Va. In ARCHIVES OF PHYSICAL MEDICINE, 32:12:766, December 1951.

Injury or disease of the neuromuscular system affects work capacity in a variety of ways. Inflammation, fibrositis or pain may restrict range of motion, resulting in disuse atrophy of the muscles activating the involved joints. Pseudoparesis often is a complicating factor in rehabilitation management. This is characterized by inability to call forth maximal contraction even though there is no disease in the central or peripheral nervous system. The inhibition may be reflex and secondary to pain, or it may be psychogenic in origin. Thus disease or trauma may reverberate in ways leading to chronic invalidism prolonged beyond the limits of healing.

Restoration of the functional capacity of the neuromuscular system is dependent upon restitution of a number of interrelated variables. Chief among these are coordination and rhythm of movement, mobility, strength, reaction time, endurance, and speed of motion. Once the first three have been attained, the others usually follow autonomously or are readily subject to improvement. Augmentation in strength is probably primary. Increased range of motion often occurs *pari passu* with gain in power. If the rate of working per unit of time is controlled, improvement in coordination and endurance also follow automatically.

Work previously done in this laboratory demonstrated the probable value of cross education as a therapeutic device, and indicated that the concurrent exercise of homologous parts might be utilized to increase the functional capacity of the weaker side. The purpose of this study was to evaluate the influence of alternate and reciprocal exercise on work output.

A series of 359 ergographic experiments was performed on a group of 52 normal adult subjects for the purpose of studying the influence on work capacity of variation in the method of performing simple repetitive exercise. Wrist joint extension was carried out against progressively increasing resistance until the requisite number of contractions could no longer be executed at the prescribed rhythm. The sum of the work done unilaterally by the preferred and the non-preferred limb was compared with the functional capacity of the same muscle groups when the exercise was performed in alternate bouts, reciprocally or by alternate strokes. The duration of exercise was the independent variable. The evidence presented supports the following conclusions:

(1) Change in the way in which a normal range movement is performed repetitively against progressively increasing resistance, exercises a significant influence on the functional capacity of the muscle groups involved.

(2) All variants of the standard exercise were superior to unilateral performance.

(3) Augmentation in work output was greatest when the exercise was performed by alternately contracting homologous muscle groups of the preferred and the non-preferred limb.

(4) So-called passive recuperation did not account fully for the change observed.

(5) Active recuperation appears to be significantly dynamogenic whether introduced in the form of alternate strokes, alternate bouts or reciprocal contraction.

(6) It is postulated that the augmentation in functional capacity observed is due to central facilitation and is affected secondarily by spontaneous synergistic cocontractions following a number of clearly defined reflex patterns. How much of the effect is due to psychologic factors incidental to shifts in attention remains yet to be determined.

The Restoration of Function by Tendon Transplantation in the Upper Limb

R. B. Zachary, F.R.C.S., Sheffield. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 14:12:277, December 1951.

No muscle should be transplanted if it is weak for, in its new situation, its action will be less powerful than ever. If a recovering muscle is to be transplanted every effort should be made to strengthen its action before operation; for example, if there has been a lesion in continuity of the ulnar nerve at the same time as an irreparable radial nerve injury, it is useless to use the flexor carpi ulnaris as a transplant before it has recovered almost full strength. Vigorous exercises in flexion and ulnar deviation of the wrist, accompanied by faradism to the flexor carpi ulnaris may help to reduce the delay

before operation. Moreover, it is probable that such exercises may enable the patient to control the action of this particular muscle so that after transplantation reeducation may be made easier.

Perhaps the most important feature of the preoperative treatment is to ensure that there is free movement over the range of action which is to be regained. If joint stiffness has occurred, frequent, vigorous, and long continued treatment by active and passive exercises and elastic traction is needed, and even capsulotomy may be necessary.

The first and most important consideration of the postoperative treatment is to keep the limb in a satisfactory position during the time required for union of the transplant with the recipient tendon. The hand is put in a plaster cast for the first three weeks. After removal of this, an anterior plaster slab is then applied in the same position and reeducation is commenced. During the first week the plaster slab is removed for exercises starting first with the effect of gravity eliminated and then gradually adding the effect of gravity and increasing the duration of the exercises. Faradic stimulation of the transplanted muscle may help reeducation.

Tendon transplantation is a valuable method of improving the function of the limb, but the treatment must be planned with caution and carried out with care. There are few procedures which demand such understanding and close cooperation between patient, physical therapist and surgeon.

Influence of Autogenous Muscle Sounds on Ergographic Work Capacity

Anna Scott Hoye, Richmond, Va. In JOURNAL OF APPLIED PHYSIOLOGY, 4:5:368, November 1951.

The influence of autogenous auditory stimuli on work output was observed on seven normal adult subjects during two series of experiments designed to permit a reliable estimate of functional capacity. These consisted of three weeks of right-sided and left-sided training, based on the limit day procedure adapted for the wrist ergograph with biaural stimulation on alternate days, and variable periods of training during which the exercise was performed exclusively in the overload zone with auditory facilitation on alternate bouts. A total of 301 experiments were performed. The evidence supports the following conclusions: (1) Auditory stimulation in the form of sounds autogenously developed by the prime mover are perfectly synchronized with the movement producing them, and serve as a cue to the severity of effort. (2) Work output is facilitated by autogenously developed auditory stimuli. (3) The facilitatory effect of auditory stimulation is significant only when work approaches maximal capacity.

Arthritic Deformities of the Wrist and Fingers

Arthur Steindler, M.D., Iowa City, Iowa. In THE JOURNAL OF BONE AND JOINT SURGERY, 33-A:4:849, October 1951.

Under the stimulus of the newer and dramatic remedies for rheumatoid arthritis, one may be confident that the general treatment of this disease is no longer neglected. But their effect, whether they be blood transfusion, the gold treatment, or the adreno-pituitary hormones, depends entirely upon the reversibility of the disease. Furthermore, it has not been proved that even the most potent of these hormonal remedies makes the local treatment dispensable in any phase of the arthritis. On the contrary, under the protection of the general treatment, conservative local measures have become more efficient and promising. The methods are well known: physical therapy, application of heat, paraffin baths, splinting, manipulative correction, active exercises, and much the same policy of reeducation as applies to other localized forms of arthritis. All these remedies have their proper place and their proper time, and it requires good judgment and understanding to allocate them properly and with profit to the patient.

The paraffin baths and whirlpool baths are the most effective means in the stage of swelling and pain and before the development of actual contractures.

Splinting also occupies an important place. It is indicated in the beginning stages of contracture. In certain cases in which swelling and pain occur spasmodically and in exacerbation, the result of splinting is sometimes striking.

If contractures do not yield to traction, is it permissible to apply manipulation? We reject forcible manipulation on general principles, both for the wrist and for the fingers. They cause intra-articular hemorrhages, adhesions, and subsequent shrinkage of the capsule. Even passive stretching should never be carried to the point where tenderness or tear of the capsule develops. Stretching should always be gentle, and one should be sure that the connective tissues are not strained beyond their natural elasticity. It is our belief that gentle passive motion and physical therapy accomplish a great deal more than manipulation; we cannot use an occasional successful case as an argument for the latter.

A Method for the Objective Evaluation of Physical and Drug Therapy in the Rehabilitation of the Hemiplegic Patient

Seymour H. Rinzler, M.D., Henry Brown, M.D., and Joseph G. Benton, Ph.D., M.D., New York, N. Y. In AMERICAN HEART JOURNAL, 42: 5:710, November 1951.

The use of physical therapy and rehabilitation measures in the treatment of hemiplegia seems well established, but objective measurements of the results have been in qualitative rather than quantitative terms. As Dinken has indicated, such objective measurements should include "determination of muscle strength, range of joint motion, and functional testing of the factors inherent in daily living."

The value of a new therapeutic approach in the management of hemiplegia can be assessed only by its ability to shorten the time-course of rehabilitation, such effects, if any, being rigidly compared with those obtained in adequate controls. The time-course of rehabilitation may be defined as the shortest interval in days between the onset of treatment, and the greatest retained achievement in range of joint motion, muscle strength, and performance of tasks of daily living.

This report describes an objective technic, established to study the effect of physical therapy and rehabilitation technics on the time-course of rehabilitation in the subject with hemiplegia as the result of a cerebrovascular accident. In addition, it can be used to screen the effects of drugs

on this clinical entity. There is great need for such a method at the present time.

Patients selected for study are placed on the regular program of physical therapy and rehabilitation advocated by Rusk and his group which includes active and passive motion of the affected extremities, ambulation, speech training for the aphasic individual, and the teaching of the activities of daily living, such as personal care, feeding, hand activities, and walking activities. The rehabilitation program for each patient is prescribed by Rehabilitation Service physicians according to individual requirements.

Serial determinations are made of all three modalities by experienced physical therapists at regular intervals during the course of therapy and observation, and the results are documented. In addition, observations by the physician of the effects of drugs on blood pressure, pulse rate, electrocardiogram, side reactions, and changes, if any, on hemogram and urine are made. Data derived by this method are quantitative and lend themselves readily to statistical analysis.

Researches in Electromyology: Preliminary Studies

H. Worley Kendell, M.D., Arthur A. Rodriquez, M.D., J. L. Murphy, B.S., and H. W. Pavela, B.S., Chicago. In ARCHIVES OF PHYSICAL MEDICINE, 32:12:755, December 1951.

The use of electromyography as an important diagnostic and prognostic tool in departments of physical medicine and rehabilitation is rapidly gaining recognition by our medical colleagues. Physicians have been successfully employing characteristic variations in voltage, duration, and phase changes of muscle action potentials to denote primarily qualitative clinical correlation. Normal, fibrillatory, complex or nascent units and their wave variants are presently recognizable action potential wave forms.

The modern research process in clinical medicine usually begins with a theoretical consideration based on established data, and, after experimentation, ends by being proved or disproved. In planning our researches in electromyography it was postulated that a study of wave forms might result in the recognition of other significant forms hitherto unrecognized by the present-day instrumentation and methods of analysis now employed. Accurate measurements are imperative. One of the major problems in the use of electromyography for diagnosis and prognosis of neuromuscular pathology has been to change the measurements from those now primarily qualitative to those of quantitative value. Thus, our research objective was formulated specifically to correlate the detailed properties of wave forms with neuromuscular pathology.

This medium offers many potentialities for recording muscle action potentials. In the authors' opinion, the major advantages as compared with other methods of recording commonly employed today are:

(1) Analysis of recording may be made at the convenience of the physiatrist.

(2) Recordings may be made by a trained technician.

(3) Photographic recordings may be made after analysis.

(4) There is a permanent record for teaching and research.

(5) Laboratory analysis of wave properties may be made in remote analytical centers.

(6) Magnetic tape is accessible and economical for permanent records.

(7) The tape may be easily edited and re-recorded.

Rehabilitation and the Practice of Medicine

Allen N. Koplin, M.D., and Sam Householder, M.A., Birmingham, Ala. In ARCHIVES OF PHYSICAL MEDICINE, 32:12:777, December 1951.

Fortunately, patients overcome minor disabilities with little or no assistance beyond routine medical care. The needs of the more seriously disabled or chronically ill patients can be satisfied only by special medical rehabilitation technics and with the help of nonmedical rehabilitation specialists.

The prolonged unemployment and excessive medical expense that accompany severe disabilities often lead to economic ruin and permanent destruction of the family. It is imperative therefore that the practicing physician understand the total problem of the severely disabled patient.

Rehabilitation should mean the speedy social reintegration of the disabled at the highest productive level, or at the least dependent nonproductive level.

In our experience the best method of rehabilitating the severely disabled is through the use of special rehabilitation centers. These are equipped to meet most of the problems of the handicapped patient, and the practice of medicine in such centers probably represents social medicine on a plane never before achieved.

There are problems of coordination among rehabilitation specialists in special centers. The solution of these problems requires the willingness of each member to test his views against those of the remainder of the group.

A case is reported to exemplify the rehabilitation problems of a severely disabled individual.

Objective Evaluation of Physical and Drug Therapy in the Rehabilitation of the Hemiplegic Patient: I—A Study of Dihydroergocornine (DHO-180)

Joseph G. Benton, Ph.D., M.D., Henry Brown, M.D., and Seymour H. Rinzler, M.D., New York. In AMERICAN HEART JOURNAL, 42:5: 719, November 1951.

Using the "double-blind" technic of administration, dihydroergocornine methanesulfonate (DHO-180) administered in conjunction with a formal program of physical therapy and rehabilitation to ten hemiplegic patients resulted in no significant effect on the time-course of rehabilitation as measured by serial analyses of muscle strength, passive range of joint motion, and activities of daily living when compared with seven other hemiplegic patients given placebo in addition to the program of rehabilitation.

Since there was no apparent difference in these two groups, they were combined (seventeen patients) and compared with still another group of eighteen patients closely matched with regard to age, sex, etiology, and mean duration of time after the onset of the hemiplegia, but who had received no specific drug therapy or rehabilitational program. The treated group demonstrated an average accomplishment of the activities of daily living approximately 133 per cent greater than the untreated group. Smaller but appreciable increments in muscle strength and range of motion also were noted

for the treated group over the untreated group.

It would appear from the facts obtained by Benton et al that although the simple passage of time may result in a certain amount of spontaneous recovery or improvement in some hemiplegic patients, the institution of an active program of rehabilitation definitely has a favorable influence on the prognosis with regard to the return of function and particularly to the development of self-sufficiency in the activities essential to daily life.

The analysis of the data in relation to the effect of physical therapy on muscle strength, passive range of joint motion, and the activities of daily living would seem to indicate that the greatest effect of the program of rehabilitation is in reeducating the patient to use more effectively "what he has left" in daily activities rather than in producing any large increases in muscle strength or range of joint motion of the affected part. This applied, in general, to both the acute and the chronic hemiplegic patient.

It appears that, unless the affected extremities recover muscle strength within the first few weeks, individual muscles recover only slightly in the ensuing months and that the ability of the patient to ambulate satisfactorily is dependent upon the success he has in learning to use the remaining normal muscles. In addition, it has recently been demonstrated by Kabat and Levine that mass muscle movement patterns in the retraining process seem to result in a greater return of muscle function.

The Aim and Scope of Treatment of Peripheral Nerve Injuries

Ruth E. M. Bowden, M.B., B.S. In BRITISH JOURNAL OF PHYSICAL MEDICINE, 14:12:268, December 1951.

The scope of treatment is limited by several factors, among these is the nature of the lesion in the nerve which has a fundamental influence upon the degree of recovery. Whatever the lesion in the nerve, it is usually possible to prevent contractures of muscles and soft tissues and secondary changes in joints. The final success of treatment is in the hands of the patient, for without regular daily usage of the limb in work and pastimes the best functional result cannot be obtained.

The Mechanism and Physiotherapeutic Relief of Pain

Clive Shields, B.M., Oxfd., London. In THE LANCET, No. 6681, p. 459, September 15, 1951.

Pain is hard to define. The lexicographers and the poets are singularly unhelpful, for they invariably contrast pain with pleasure; but, since pleasure is an emotion, and pain is perceived through the senses, the two experiences are in no way comparable.

Those who are concerned with the treatment of postural defects in children must have been impressed by the infrequency with which such patients complain of pain; whereas in the adult with these conditions it is generally pain that compels him to seek medical advice.

It is noteworthy also that the localization of pain by children is very inexact. Precision in locating pain comes with the passage of years, and this can be due only to the storing of past experiences.

Suggestion is used in the physical therapeutic relief of pain and is common to all therapeutic measures. For example, class exercises owe their superiority over individual exercises to suggestion, imitation, and competition, and few would deny the value of group therapy.

The mechanism of rest in relieving pain depends on the cause of the pain, but generally it eliminates frictional irritation in joints, tendons, and muscles, and relieves muscle spasm; and in pain due to ischemia, whether of muscle or nerve, it reduces the metabolic requirements of damaged tissue. Conversely, "rest pain," seen in peripheral circulatory failure, may be relieved by modified and graduated activity increasing the collateral circulation.

It is a common observation that pain due to swelling—e.g., in massive edema of the legs in cardiac failure or in nephritis—is always aggravated by coexistent inflammation. It has been suggested in explanation of this that in inflammation histamine or a histamine-like substance is liberated. The chief objection to this is that histamine when injected gives rise to itch but not to pain, and that histamine when ionized relieves certain types of peripheral pain. Further, Schumacher (1943) showed that a skin erythema induced by local irradiation with ultraviolet rays reduced the pain threshold of the treated skin by fifty per cent, whereas the same degree of erythema produced by nicotinic acid left it unaltered. He concluded that the difference was due to the presence or absence of inflammation.

This is very confusing when we try to explain the mechanism of pain relief by counter-irritation. To say that counter-irritation operates because spatial summation does not take place with pain as it does with heat and cold, and that it is only possible to feel the greater of two simultaneous painful stimuli, is no doubt true, but it does not explain why moderate counter-irritation, not even reaching the intensity of discomfort, may abolish the primary pain.

A prolapsed intervertebral disc gives rise to pain because it induces ischemic neuritis; and, though no physical therapy measure that the author knows of can reduce the prolapse, properly applied heat, combined with rest and traction, often can relieve pain by resolving the inflammation and surrounding edema which accompany the prolapse.

Effects of Temperature of Local Baths on Deep Muscle Temperature

R. N. Danielson and F. W. Kinard, Charleston, S. C. In JOURNAL OF APPLIED PHYSIOLOGY, 4:5:373, November 1951.

Many measurements of tissue temperatures, both in man and in other animals, have been made by various workers. Nevertheless, when curiosity arose as to the extent to which the muscles of an extremity might be warmed or cooled by immersion of the limb in a water bath, very few pertinent data could be found in the available literature.

This study showed that immersion of the limb of the dog in a water bath at a temperature higher or lower than that of the extremity leads to a prompt and marked change in the deep muscle temperature of the limb in the direction of the bath temperature. This change in muscle temperature is enhanced by occlusion of the circulation.

Rectal temperatures are affected in the same direction but to a lesser extent when the circulation is intact, but are unaffected when the circulation is occluded.

At an elevated bath temperature, irreversible damage to tissues may be produced when there is interference with the circulation, although no damage appears under similar conditions when the circulation is intact.

Influence of Physical Agents and of Certain Drugs on Intra-Articular Temperature

Khalil G. Wakim, M.D., Ph.D., Adrien N. Porter (Technical Assistant), and Frank H. Krusen, M.D., Rochester, Minn. In ARCHIVES OF PHYSICAL MEDICINE, 32:11:714, November 1951.

The literature on the effects of physical agents on intra-articular temperature is presented in this article. A study was made of the influence of hot packs, short-wave diathermy (cable and pads), microwave diathermy, ice packs, percutaneous electric stimulation, vasoconstrictor and vasodilator drugs and pyrogens on intra-articular temperatures and temperatures of adjacent tissues. Hot packs, short-wave and microwave diathermy raised the intra-articular temperature, as well as the temperatures of the adjacent muscles and subcutaneous tissues. No significant reflex changes in the intra-articular temperature of the contralateral joint was observed. Ice packs markedly reduced the intra-articular temperature of the treated knee and adjacent structures, but the reduction in the contralateral untreated knee was slight. Repeated percutaneous electric stimulation produced no significant change in the intra-articular temperature, but the intramuscular and subcutaneous temperatures of the stimulated leg were raised. Intravenous administration of vasoconstrictor and vasodilator drugs (epinephrine, nitroglycerin, priscoline and histamine) produced insignificant changes in the temperature of the joints and adjacent tissues. Pitressin produced a gradual but definite reduction in intra-articular as well as in intramuscular and subcutaneous temperatures. Pyrogens produced a slight rise. The changes produced in the intra-articular temperature and in that of neighboring tissues by the physical agents and the vasoconstrictors and vasodilators used in this study were in the same direction.

Trefriw Spa

R. T. Browne. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 14:11:243, November 1951.

The special feature of this spa, a feature unique among the spas of Wales, is the provision of a fully effective home treatment by which the waters may be taken at home in the same way and with exactly the same beneficial effects as at the spa itself. The waters are dispensed for internal consumption in the usual way, though, except where specially ordered by the physician, balneotherapy treatment is not at present given, since the internal treatment alone has proved to be fully effective. The naturally high degree of concentration of the water and the consequent small dose enable the waters to be bottled in small hermetically sealed phials each containing the daily dose, so that patients may take the treatment at home without interference with their daily occupations. The home treatment is regarded by physicians and patients alike as an immense advantage and the most important work of the spa, benefiting, as it undoubtedly does, all sections of society. A seven weeks home treatment, prolonged where necessary, has been the means of effecting alleviation and cure in cases of anemia, rheumatism, neuritis, fibrositis, sciatica, and has been taken with the greatest advantage in conditions of osteoarthritis and rheumatoid arthritis that have not responded to any other form of treatment.

The Use of Splints in Peripheral Nerve Injuries

J. R. Napier, MRCS., London. In BRITISH JOURNAL OF PHYSICAL MEDICINE, 14:12:281, December 1951.

For the purposes of discussion the treatment of peripheral nerve injuries by splinting is divided into primary and secondary phases. During the primary phase when there is the expectation of recovery, the purposes of splinting are (1) to prevent the overstretching of paralyzed muscle and the contracture of their antagonists, (2) to prevent joint stiffness by encouraging activity, (3) to maintain the normal physiological patterns of function throughout the period of paralysis and thereby maintain functional capacity and (4) to prevent the development of trick movements.

During the secondary phase where further significant recovery of muscles is unlikely, the guiding principle is functional advantage and splints are selected with the object of substituting in a permanent fashion for lost muscles.

New Microwave Diathermy Director for Heating Large Regions of the Human Body

Frank H. Krusen, M.D., Rochester, Minn. In ARCHIVES OF PHYSICAL MEDICINE, 32:11:695, November 1951.

For some time there has been a definite need for a director which would distribute microwave energy over larger areas of the body than is possible with the directors which have been available.

The director described in this article is clinically very satisfactory for applying deep heating to areas of the body approximately 8 by 18 inches in size. This new director has been designated "director U" and looks like an elongated corner reflector. With this it is possible to apply heat to one surface of almost an entire leg, or to the full length of an arm. It also can be positioned longitudinally over the back to irradiate the region overlying essentially the full length of the spinal column.

This new director greatly extends the usefulness of microwave diathermy machines, and makes it possible to apply microwave diathermy in many conditions which could not be treated so effectively with the smaller directors previously available.

Treatment of Burns: The General Condition, Early Definitive Care of the Local Area, and Repair of the Sequelae. A plan for Care of the Survivors of an Atomic Attack or Any Mass Disaster

James Barrett Brown, M.D., and Minot P. Fryer, M.D., St. Louis. In THE JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION, 48: 12:973, December 1951.

This is a discussion of what is thought to be the best treatment of burns; supportive therapy with adequate supply of whole blood, antibiotics and adequate diet in a hospital, with fine mesh grease gauze, mechanics waste, pressure dressings, done as often as necessary, under anesthesia, for rapid preparation for skin grafting when there has been full thickness loss of skin in any type burn.

Once skin grafts have become stable, physical therapy and directed exercises may be of great help.

In burns of the hands, every effort should be put forth to prevent deep infection which will rapidly fix tendons and joints and produce deformities that may never be overcome. It is particularly essential to get all areas of full thickness loss clean and covered with grafts as soon as possible. There seems to be no agreement concerning the respective merits of early motion and immobilization, but perhaps most will agree that active movements of the fingers should not be delayed, especially in adults. Active movements in soapy water at the time of each dressing are encouraged on our service as giving the best results.

Physical therapy has a definite place in the rehabilitation of burned patients. Extremities splinted until healed or until a skin graft is solid require restoration to function. The aim in the early resurfacing of a burned part is the return as soon as possible to useful function. This results in less deep scar than if spontaneous healing is waited for. Most patients so grafted require only limited physical therapy. It is started as soon as possible after a rapid surgical restoration. Active motion in a pan of warm soapy water usually is all that is necessary, and the usual eager patient can carry on on his own at an early date. The rapid restoration of function of a child is a good demonstration of this possibility. Badly fixed hands, of course, require long continued work in physical therapy.

At a later date it is important to recognize how much disability is in the joints rather than overlying scar as forced manipulation may make this worse instead of better.

Possible first aid for treatment of burns on a disaster scale is outlined, including those burns of atomic origin.

Book Reviews . . . . .

The Scientific Paper: How to Prepare It. How to Write It. (A Handbook for Students and Research Workers in All Branches of Science.) *By Sam F. Trelease, Columbia University, New York. Second Edition, Cloth; price, $2.50; pp. 163, illus. The Williams and Wilkins Company, Baltimore, 1951.*

Writing is an essential function of the scientist's profession. It has been stated that scientific medical writing is in large part an altruistic occupation. The possession of knowledge and technical skill by the physical therapist is not enough. He must be able to disseminate his knowledge so others will benefit and progress will take place. Furthermore, our professional journals must have papers written in order to survive. Proficiency in writing will come by a study of accepted methods and through long practice.

The Scientific Paper will lighten the task of the physical therapist in preparing a scientific paper and will help to make the results of his endeavor more effective. It is intended as a handbook to meet the practical needs of students and research workers in all branches of science. In the main, the directions are for the preparation of theses and dissertations, but the text also may serve as a style manual for journal articles and monographs. The author, an expert in his field, is well suited for the writing of such a text as he has had wide experience in reading student manuscripts.

The second edition of the *Scientific Paper* is the result of a process of development. Originally published under the title of "The Preparation of Scientific and Technical Papers," it was almost completely rewritten in 1947. The present edition is a further expansion and revision of the original. The new organization of the subject matter assists the reader in quickly finding the desired information.

The volume of 163 pages is compact and of a convenient size for easy reference. The scope of the book is complete from the first chapter, which describes how to select a problem, and the early steps in its planning, to the last chapter which deals with the final proofreading following the prepublication review. Technics in writing are discussed briefly, yet with sufficient detail and examples to illustrate each point. Many rules and suggestions aimed at uniformity and a high standard of presentation are given, these being based on the contributions of approximately fifty recognized authorities listed in the bibliography at the conclusion of the book.

The physical therapist will find Chapter 2, Writing the Paper, and Chapter 3, Good Form and Usage, of particular value. In these chapters concrete instructions are given on such phases as how to make an outline, how to arrange the subject matter in a logical and interesting way, and how to use citations, abstracts, quotations, and footnotes. Here also the accepted way to prepare the typewritten copy is explained. The use of tables and illustrations including graphs, drawings and photographs, is presented in Chapters 4 and 5, all of which has applicability to physical therapy research.

The physical therapist of today must be prepared to write accurately, fairly, clearly, and concisely and apply approved rules of English composition. *The Scientific Paper* is recommended highly to all those interested in or contemplating the sharing of the benefits of their study or experience with other members of their profession. The book will prove to be extremely valuable for either beginning or experienced writers who wish to refer to the more important research methods and technics presented in a condensed and easily understandable form.

Physical Medicine and Rehabilitation for the Clinician. *Edited by Frank H. Krusen, M.D., Professor of Physical Medicine, Mayo Foundation and Head of the Section on Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, Minnesota. There are 24 contributors. Hard cover; price, $6.50; pp. 371. Published by W. B. Saunders Co., Philadelphia, 1951.*

This book, which is made up of a series of lectures prepared for the American College of Physicians, is designed primarily to acquaint the average clinician with all the phases of a rapidly developing new special branch of medicine—physical medicine and rehabilitation. The chapters have been prepared by members of the staff of the Mayo Clinic, and, in several instances, by other leading specialists in physical medicine and rehabilitation in various parts of the United States. The discussions of the latest developments in physical medicine and rehabilitation will be of particular benefit to the specialist in this field, the physiatrist. Medical students, physical therapists and occupational therapists will find much value in this book.

The contents of this book fall logically into four major sections. The first section deals with therapeutic applications of physical agents and procedures. In this section appears an important chapter on pre-

scription writing in physical medicine which will be extremely useful to every clinician. In addition there are chapters dealing with heat, massage, exercise, training in posture, procedures for rest and relaxation, occupational therapy, and ultraviolet radiation. Finally, there is included in this section experimental studies concerning new physical agents, microwaves, and ultrasonic energy.

The second section covers diagnostic applications of physical agents and procedures. Included here are chapters on electrodiagnosis, on testing procedures in the evaluation of pain and in neurologic diagnosis, and on measurements of temperatures in the study of circulation.

The third section presents the clinical aspects of the field and is composed of discussions by outstanding authorities from various medical centers. Here are covered the organization and management of physical medicine and rehabilitation in a general hospital, the treatment and rehabilitation of hemiplegia, painful feet, poliomyelitis, tuberculosis and other pathologic lesions of the chest, cerebral palsy, paraplegia, arthritis, frostbite, and various other conditions.

The fourth and final section contains chapters on the fundamentals of anatomy, therapeutic exercise and physiology, and the physiologic effects of rest and immobilization. This chapter is of especial value to the clinician who desires a brief refresher course in functional anatomy and physiology in order to use physical medicine and rehabilitation procedures intelligently in his practice.

This is an authoritative collection of information which will provide, for the first time, an up-to-date source of reference and knowledge in this fastest growing of the new specialties—physical medicine and rehabilitation. Although in this volume there are still a few gaps in the total of information in this field, it serves nevertheless as the most complete and scientifically dependable body of knowledge for the average clinician that has been compiled to date. It will undoubtedly prove a most welcome addition to the field of physical medicine and rehabilitation.

The United States Public Health Service 1798-1950. *By Ralph Chester Williams, M.D., Assistant Surgeon General, U.S.P.H.S., Washington, D. C. Hard cover; price, $7.50. Pp. 890; illus. 294. Published by Commissioned Officers Association of the United States Public Health Service, Bethesda, Maryland, 1951.*

To set down clearly, simply and completely the 152-year history and accomplishments as well as the activities of the U.S. Public Health Service in a most readable 848 pages is not easy. Yet Dr. R. C. Williams has done so. Not even a medical activity or disease, virus or mosquito has been left out in matters which concern the whole world—as regards its health!

Those men and women who did the jobs assigned to them receive the full credit for their unselfish and loyal devotion to duty and the Service.

The author's name in the Index has a mere four page-numbers for reference to his contribution to the 152-year activity of the Service. His 34 years in the Service were a bit more productive however than appears in print. A little more about him and what he has done "snuck" in on page 848.

How many people (lay or medical) know just WHAT the P.H.S. is? and what it has accomplished? For example what part did the Service play in the control of yellow fever, smallpox, cholera, rat control and plague, psittacosis, hookworm, venereal disease, or tuberculosis—to mention only a few well known diseases?

How many know what and where the U.S. Marine Hospitals (now called Public Health Service Hospitals) are and whom they serve? What has the P.H.S. to do with quarantine or the Coast Guard?

What part did the Service play in our wars from 1812 to the present "unpleasantness" in Korea? What is the Service doing at the present time in the field of research in cancer, world health, mental health, heart disease, radiation hazard, industrial health, communicable diseases, dental research or narcotic addiction—again to mention only a few of its activities? What interest has the Service in hospital construction, nursing, rehabilitation, medical education, vital statistics and many other vital medical matters?

How well is it known that the Commissioned Corps of the P.H.S. (both Regular and Reserve) is composed of medical, dental, sanitary engineer, pharmacist, scientist, nurse, dietitian, therapist (P.T. & O.T.), veterinarian and sanitation officers to the number of some 1038 as well as many more in Civil Service status?

This book is not just a statistical compendium but a most readable history of the Service. It is written in a very human and understanding form with an occasional out-cropping of the author's somewhat controlled sense of humor.

The index and illustrations (some 193 in number) must also be mentioned as both are unusually excellent.

Ankylosing Spondylitis: A Practical Guide to Its Diagnosis and Treatment. Part I. *By F. Heneman-Johnson, M.D., F.F.R., D.M.R.E., Physician to the Charterhouse Rheumatism Clinic; Consulting Radiologist to the French Hospital and Dispensary; Past President, Section of Radiology, Royal Society of Medicine; Faculty of Radiologists; Member of Scientific Advisory Committee, Empire Rheumatism Council, Chairman of Council; British Rheumatic Association.*
Part II. *By W. Alexander Law, O.B.E., M.D., F.R.C.S., Assistant Surgeon, Orthopedic Department, the London Hospital; Consulting Orthopedic Surgeon to the Charterhouse Rheumatism Clinic. Cloth; price, $6.50. Pp. 200, with illustrations. Butterworth & Co. Ltd., London, England; The C. V. Mosby Company, St. Louis, Mo., 1949.*

This book has been written in two sections: one, by a physician and the other by an orthopedic surgeon. In the former the author discusses the etiology of ankylosing spondylitis which is considered an entity apart from rheumatoid arthritis. Most American investigators hold that spondylitis is only another manifestation. Published in 1949, the book contains little information about the use of cortisone and ACTH which may have added much to the etiological discussion. In addition, he presents in detail the technic of treatment with x-rays and injections of gold, bismuth, arsenic, and thorium X. The curative effect of roentgen therapy in early spondylitis is firmly believed—a view no longer held by American physicians.

The second part deals with the recent surgical procedures which have been developed by Smith-Peterson and his co-workers at the Massachusetts General Hospital where the author spent a great deal of time. The details of spinal osteotomy, vitallium mould arthroplasty of the hip joint, and arthroplasty of the temporomandibular joint, shoulder, knee, and elbow joints are considered with little mention of the selection of cases.

Although both authors mention the need and importance of physical measures very little discussion is

given to such therapy. The book as a whole has many valuable illustrations and an adequate bibliography. It may be recommended to those physicians and therapists who desire an understanding of surgical accomplishments in rheumatoid arthritis.

Kan en Spastiker Laere at Klare Sig Selv. *(Can A Spastic Learn to Take Care of Himself.) By Esther Lunning. Paper cover; price, $1.50. Pp. 142; illus. 91. H. Hirschsprings Forlag, Copenhagen, 1951. (Translated and reviewed by Mrs. Ella Biondi, Physical Therapy Department, New York Orthopedic Hospital, New York City.)*

Esther Lunning, a Danish physical therapist, spent 1½ years in the United States studying our method of treatment for cerebral palsy children and has put her observations and experiences into this excellently written Danish book which should prove of great value to people in Denmark interested in the problem of cerebral palsy.

It is especially written for the parents of cerebral palsy children, but also contains much helpful information for doctors, physical therapists, occupational therapists, teachers, etc., stressing the importance of working together to help the child develop and find as far as it is possible an independent and useful place in society.

Miss Lunning describes the different types of cerebral palsy and the method of treatment for these, with detailed description of objects, apparatus and furniture. Each chapter is richly illustrated.

This is the first book of its kind that has appeared in Denmark dealing with the fundamental principles of the training of cerebral palsy children and Miss Lunning is to be congratulated on having done such a splendid job.

Meet Our New Contributor

Donald B. Wagner—Senior student, College of Physicians and Surgeons, Physical Therapy School, Columbia University.

Mr. Wagner, whose home is York, Pa., attended Franklin and Marshall College at Lancaster for his two year prerequisite work in physical therapy. He will receive his B.S. degree from Columbia, June 1952. Mr. Wagner is a student member of the American Physical Therapy Association.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

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WANTED: Physical therapist for hospital having department affiliated with New York Association for Crippled Children. Salary and details are open. Write H. G. Willis, Administrator, Alice Hyde Memorial Hospital, Malone, New York.

WANTED: Qualified physical therapist for children's work in Orthopedic School. Write to Mrs. Doris Klaussen, Principal, Ann J. Kellogg School, Battle Creek, Michigan.

VACANCY for physical therapist with experience or specialized training in cerebral palsy at new cerebral palsy clinic for pre-school children in Canton, Ohio. Inexperienced but suitably qualified applicant will be given scholarship for specialized training. Outpatient treatment center with five-day working week. Salary to depend on qualifications of applicant. Contact Mrs. Richard O. Hervey, O.T.R., Administrative Director, Ohio Elks Cerebral Palsy Training Center, 325 Broad Ave. N.W., Canton, Ohio.

WANTED: Physical therapist to work in a special school for cerebral palsied children. School conducted in regular public school system with the local Cerebral Palsy Society assisting. A summer scholarship is available for the applicant in this special field if previous training has not been adequate. Write: Netta Ford, 218 East Market Street, York, Pennsylvania.

WANTED: Qualified female physical therapist for children's Orthopedic Convalescent Hospital, 2 miles from downtown Lexington, Kentucky. Salary commensurate with experience and qualifications. Apply to Administrator, Cardinal Hill Convalescent Hospital, P.O. Box 1048, Lexington, Kentucky.

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